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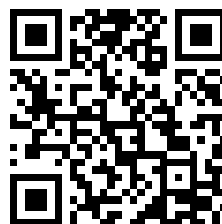
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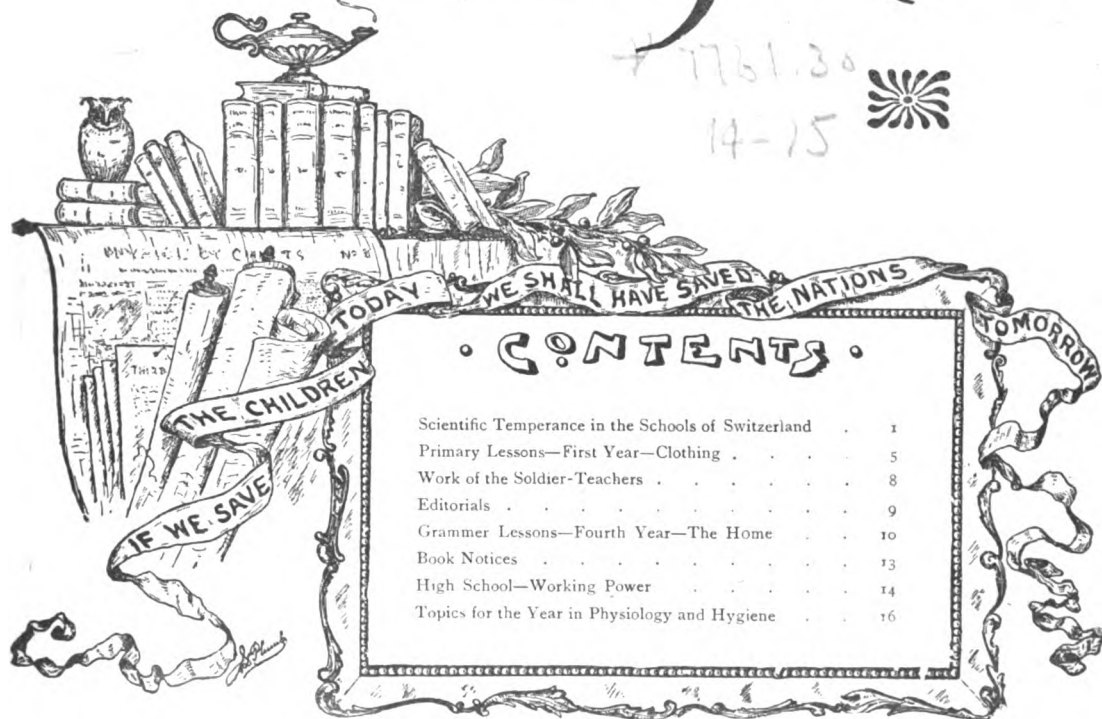


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THE SCHOOL PHYSIOLOGY JOURNAL



PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, EDITOR

VOL. XIV. NO. 1
SEPTEMBER, 1904

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School Physiology Journal

Vol. XIV

BOSTON, SEPTEMBER, 1904

No. 1

QUEEN SEPTEMBER

BY MARIANNE FARNINGHAM

WHO dare call Queen September old?
Her face is fair,
She does not stoop, she is not cold,
But debonair.

She claims, 'tis true, a longer night
For rest and sleep;
Nor will she who respects her sight
Late vigils keep.

But her blue eyes are clear as youth
When day returns,
And her cheek glows with love and truth
When evening burns.

Rich, jovial, clothed in gayest dress,
She spends the day,
And with large-hearted lavishness
She gives away

Gold for the gleaner, for the thrush
Harvests of food,
And for world-weary men the hush
Of quiet wood.

She cares for children in her prime,
And with them plays
The merry games of nutting-time
On royal days.

Yet wears her golden crown of state
On brow serene,
And bears herself erect, elate,
A charming queen.

SCIENTIFIC TEMPERANCE IN THE SCHOOLS OF SWITZERLAND

AN ADDRESS BY MR. HEYMANN, INSTRUCTOR AT
MALLERAY

EVERYWHERE that Attila passed the grass never grew again, an historian tells us. Similarly, wherever alcohol, that modern Attila, has passed, it has swept away like a tempestuous wind all that the school had built up. It casts its malevolent shadow over our beloved country, all social ranks of which it has penetrated. Already it is attacking the reserves of the nation; our youth are becoming alcoholized.

WHAT IS EXPECTED OF THE SCHOOL IN GENERAL

Since alcohol amasses only ruins, demolishing the work of the school, destroying in man what is most beautiful, most noble, stifling in the individual the holiest aspirations, awakening in him bestial appetites, should not the school rightfully interest itself in the anti-alcohol movement? What is not expected of the school? Upon it rest all our hopes, and to it all look; from it will go out the nation of tomorrow, the priest and the peasant, the scholar and the business man, the legislator and the criminal.

What will the school do? It will be the compass indicating to the pilot his passage across the ocean of life. To accomplish this noble end, it will undertake a vigorous crusade against intemperance by organizing anti-alcohol instruction. "When we wish to make a new truth known to men, it is necessary to go to the youth; it is a long route, perhaps, but it is the surest."

THE INTRODUCTION OF SCIENTIFIC TEMPERANCE

We see nothing in the way of introducing into our classes occasional teaching against alcohol, on condition that it be officially included in the course of study. I shall only roughly sketch a plan by which, so far from overloading the course of study, this instruction will happily round out all branches on the program.

ITS CONNECTION WITH GEOGRAPHY

The study of geography takes us to the doors of the prisons, houses of correction, and state insane asylums. A short description of these establishments filled with unfortunate victims of drink will make the child reflect. A class visit to an asylum will lead the scholars to make resolutions to do everything possible to avoid ever becoming inmates.

It will be easy to enable the school to notice that certain cantons, (certain villages even) which hold the lowest place in the recruiting examinations owe that least honorable place to the intemperance of their inhabitants. "Normandy, glorious old Normandy, is on the decline," says M. Leon Deries, Manche Academy Inspector. "From 1850 to 1896, the Department of Manche lost 100,000 inhabitants. From 1896 to 1901, an added loss of 12,000 inhabitants—112,000 souls lying in the cemetery slain by alcohol. As for the living, they bear the infamous brand of the poison. Stature

decreases, the chest is growing narrow and with this degenerate race we are far, very far from those giants which conquered England, made old Charlemagne tremble, and recoiled only before the sword of Robert Le Fort."

Thousands of experiments have established the fact that in time of war as in peace, in all climates, the soldiers better endure the fatigue and privations when they are completely deprived of alcoholic drinks. These experiments have been made by the English in Africa, in Asia, and in America. Nansen's voyage of exploration was accomplished without the aid of alcoholic drinks.

The difficulty experienced by Europeans in becoming acclimated in deadly climates is due to the use, *even moderate*, of spirituous drinks.

ITS CONNECTION WITH PHYSIOLOGY AND HYGIENE

Temperance instruction is intimately connected with the lessons in physiology and hygiene. It is in this branch that the child must be given something besides a mass of incoherent ideas about the nature and effects of alcohol. In the course of the lessons, he will learn that alcohol is a poison which ought to appear only on the shelves of the apothecary from which it has come down.

In the study of the human body we shall also pass in review all the sad effects of spirituous drinks upon the organism. One will tell, will prove, and will repeat in class the facts that alcohol, so far from aiding digestion, retards and injures it; that alcohol often causes cancer of the œsophagus, stomach, and intestines; that it overworks the liver and is the source of various diseases in the entire digestive apparatus (cirrhosis, fatty degeneration, etc.); that it injures considerably the circulation of the blood, lowers the temperature of the body, paralyzes the nerves, and so far from giving strength acts in an unfavorable manner on the muscular system.

In this connection, several interesting experiments will confirm the theory explained by the master. World champions in all sports have proscribed all alcoholic drinks in their diet. Experiments made with the ergograph will be described in class. In connection with the deadly influence of alcohol upon the brain, it will be very useful to explain suitably and clearly the researches of Dr. Kræpelin, those of M. Emmanuel Bayr of Vienna, etc.

Thus the school will destroy forever the numerous prejudices so strongly rooted among our people who willingly believe that alcohol is an aid to digestion, an aperient, a food, that it warms, strengthens, heals, in short, that it is a universal panacea.

Concerning alcohol as a food, our children

will not be much surprised to hear of M. Dulaux; but they will rather be of the opinion of Dr. Atwater who [now] affirms that alcohol is a very bad food, and of Dr. Metchnikoff who says that *alcohol is a poison*.

ITS RELATION TO CHEMISTRY

In chemistry one speaks of carbonic acid, of sugar, of fermentation, of alcohol. Here again it will be easy to touch the question of alcoholism.

ITS BEARING ON COOKING

It would be useful to teach the young girls in the cooking schools the worthlessness of alcohol. By her ignorance, the young wife is very often the direct or indirect cause of the depraved habits of her husband.

The school is not merely called upon to form phonographs and writing machines, it must forge characters, create individualities.

Let us broach the practical side of the question which we are considering, because it is not only a question of *instruction*, but also and especially of an anti-alcohol *education*.

ITS PLACE IN ECONOMIC PROBLEMS

Numerous economic problems which are almost totally lacking in our manuals would replace to advantage certain abracadabra combinations or the hectolitres to which reference is constantly made. The innumerable statistics available would be very useful to us in working out a host of examples with a bearing at once simple and practical.

1. Some one spends each day 5 cents for wine. How much does he spend annually (365 days)?

How many kilograms of bread (2.2 lbs) at 7 1-2 cents could he buy with that amount?

2. In 1902, the three insane asylums of the canton of Berne contained 1,432 lunatics, the expense for whom was \$222,110. Among them 20 per cent were alcoholics. How much did it cost to support them?

3. In 1900, there were consumed in Switzerland 222,800,000 quarts of beer at 10 cents a quart. How much was that per household (there are 650,000 households in Switzerland)?

ITS PLACE IN READING-BOOKS

Some reading-books used among us contain a limited number of temperance selections. It is important that the essential and preferred book of the child put him on his guard against the baneful effects of the use of intoxicating drinks. It should include a goodly number of chapters which will form a complete résumé of the principal temperance truths, because it is indispensable that well co-ordinated ideas be given upon

this subject. The reading selections will be rounded out by the teacher's explanations.

ITS PLACE IN COMPOSITION

Compositions are sometimes so dry, the ideas they contain so strange and obscure that the correction of the exercises taxes the patience of the most devoted teacher. But if we try temperance subjects! Certain proverbs such as the following may be developed:

1. A falling house may be repaired, but not ruined health.
2. Young drinker, old beggar.
3. Temperance, comfort; alcoholism, pauperism.

Many dictation and grammatical exercises will be so many means of opening the eyes of the pupil to the disastrous consequences of intemperance.

ITS CONNECTION WITH LITERATURE

In connection with literature, it will be useful to call the attention of the class to the many men of superior abilities who have foundered at the bottom of the glass. "Need one recall the moral ruin of Musset?" or call to remembrance Hoffmann, the author of "Fantastic Tales," who was wont to seek cerebral excitation in wine? He was not a drunkard, M. Arède Barine relates, and almost always stopped when he considered himself sufficiently set up. Yet early in life paralysis snapped him off. A sad human wretch, he was carried, like a helpless child, in the arms of a servant.

Biography always leaves ineffaceable impressions upon the open mind of the child. What lessons in citizenship the life of a Luther, a Franklin, a Livingstone affords!

One or two poems in good taste, having a temperance bearing, would certainly be an acceptable addition to our reading books.

ITS RELATION TO HISTORY

In history, it will be easy to speak of temperance in the primary as well as in the second-

ary schools. Many anecdotes, episodes, biographies, etc., lend themselves admirably to lessons of this kind.

National history: In the time of the Romans, corruption was great; some emperors were noted for their convivial orgies. Charlemagne was temperate in drinking and eating, especially in the former. Hating drunkenness in any man, he had an especial horror of it for himself and his family. Rudolf of Hapsburg tried to make himself popular by frequenting all the inns of the country.

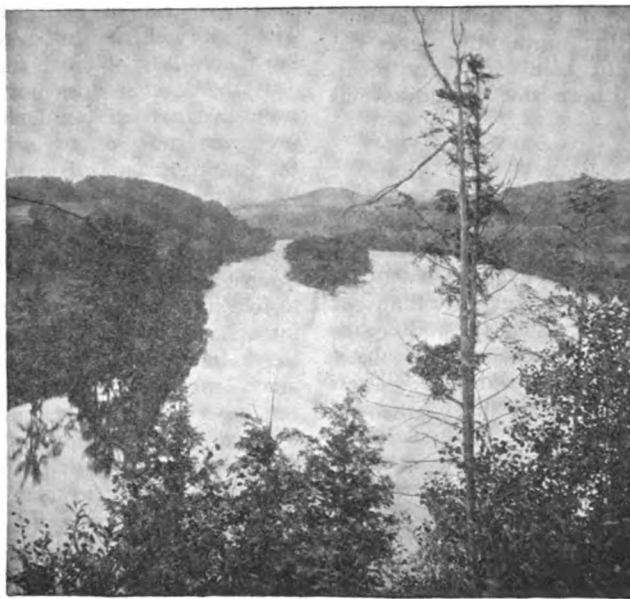
In the fourteenth century, people began to meet at the public house to chat, to play and to drink; the inns were very numerous and one could drink all day at a cost of about 20 cents.

After the Burgundian wars, the mercenaries spent some years in foreign lands, whence they returned with habits of idleness and intemperance. Thefts and robberies committed by old soldiers increased in an alarming fashion.

At the beginning of the fifteenth century, the noisy carnivals became widely extended. At the battle of Dornach the Imperials were drunk when the Confederates suddenly fell upon and completely routed them. At Mt.

Gubel (1531) 4,000 men of Zurich, surprised while in wine, were defeated by 400 Zugois. Jenatsch was assassinated while at an inn at Coire where he was drinking and feasting. During the Thirty Years' War, the Swiss peasants grew rich, but became addicted to drink and gaming. At Vilmergen, the Bernese were well on the way to drunkenness when they were surprised by the Catholics. The shameful excesses of the French soldiers in 1798 are well known.

General history: At Athens, the laws of Solon were draconian to the point of punishing by death an archon found intoxicated. At Rome, under the Republic, wine drinking before the age of thirty was forbidden. The Egyptians, Assyrians, and Phoenicians were familiar with



"There is a harmony in autumn, and a luster in its sky
Which in the summer is not felt or seen."

*Courtesy of the Boston & Maine Railroad.

wine orgies. The irregularities of certain historic persons are well known: Marius, Alexander the Great, Wenceslas the drunkard, Philip the Good, Henry III., Louis XIV., Catherine II. The sobriety of Charles V., of Henry IV., of Charles XII. of Sweden, of Gustavus Adolphus deserves to be mentioned.

Alcohol caused ravages during the Thirty Years' War. It became the faithful companion of Napoleon First's soldiers whom it decimated in the fearful retreat from Russia.

Its influence has always played an important role in the most bloody periods of history. The streams of alcohol have always accompanied the streams of blood: the Jacquerie, the Prague, the Fronde, the Fall of the Bastille, the Terror. "Alcoholic excitation certainly contributed to the agony of the Paris Commune. It is well known that during the siege, the consumption of 'petit bleu' was very great. The wine market had been stocked with several years' supply."

ITS CONNECTION WITH AMUSEMENTS

The school ought never under any pretext to tolerate the passing of alcoholic drinks to children at races or school festivals. The masters who arrange these festivities ought to carry all the responsibility; therefore they have the right to forbid children from carrying the poison with them. Moreover, our soldiers have to submit to such a restriction; why should the children have greater license? We know that the instructor will sometimes clash with certain town potentates, but one can be courageous in other places than on the field of battle.

THE ATTITUDE OF THE TEACHER

If the educator would strengthen the child's will, that lever of life, he must also get possession of his heart, the great motor of life. That is why it is necessary that the instruction of the teacher on this subject should be vital, captivating, communicable, because it is much less a matter of teaching than of convincing. The instruction that we are extolling ought to gush forth from a heart which is devoted, moved, taken possession of, believing.

The school will seek before all to entrench the doctrine of duty in a state of heart. For that it is necessary that the teacher be convinced of the alcoholic peril. We believe that when the teaching profession has studied to the bottom the question of alcoholism, it will be won to our cause. Therefore, let us consider what is necessary to ensure that the future teachers be prepared by the normal school for anti-alcohol instruction.

ITS PLACE IN HIGHER INSTITUTIONS OF LEARNING

"In our higher institutions of instruction,

academies, universities, etc., alcoholism can be studied in every phase, because the evil which penetrates every domain of social and economic life ought to be attacked and combated from all sides, as well by the jurist and the philosopher as by the physician and the theologian."

The route of precepts is long, that of example the shortest and surest.

Shall we say it? The teacher ought to be in the community the apostle of temperance, we would willingly say of abstinence. The *example of the master* is capable of working miracles. Of what use will it be to prepare fine phrases and multiply good advice if the master sacrifices himself to the bottle?

RESULTS THAT MAY BE LOOKED FOR

Now what do we expect from this teaching? The fruits will have to be long awaited perhaps, but they will be so much the fairer at maturity.

If the teacher does not fail in his duty, in twenty years the future legislators whom we are preparing, now on the school bench, will save the country from an irremedial decay by voting the death decree of the *monster alcohol*.

We desire to declare to those who think that private initiative ought to maintain the combat against alcoholism, that the school has no right to fold its arms in the presence of candidates for suicide, for crime, and for madness. To the indifferent, we will say that they can not much longer remain in their sublime egotism, because vice with its shamelessness splashes us with mud at every step. As for the insincere and disingenuous who perhaps live on profits tainted by alcohol, we say to them quite plainly: One never asks slave dealers if they are abolitionists!

The school! That is the lever sought by Archimedes. We ask you to make the twentieth century the temperance century!

THE DANDELION

By Lillian Howard Cort

He smoothed with pride his yellow hair—

He liked its color, vain young chap,—

And pitied Daisy just because

She tucked hers in her snowy cap.

"Oh, oh," he cried, "my hair's so thick,

I couldn't do that if I tried."

"You'd keep it longer if you did,"

The Daisy with a smile replied.

Alas, her words were all too true,

For left uncovered day and night,

The sun and rain beat on his head

And turned his golden locks to white.

And soon a dreadful thing occurred,

At which the Daisy looked appalled,

A blustering wind swept by, and lo!

He left the poor old fellow bald.



CLOTHING

HOW children should be dressed, and of what material their clothing should be made are questions belonging primarily to the home rather than to the school; yet, so close is their relation to the health and therefore to the entire wellbeing of the child, that they well deserve a place in the course of study.

Even in primary grades, the subject of clothing can not be talked over without the children absorbing many helpful ideas which will be reported at home and acted upon by the mother.

The state is beginning to realize that the health as well as the education of its future citizens is a matter of moment, and in the public school the teacher represents the state.

Round shoulders and the protruding hip that indicates incipient curvature of the spine, to say nothing of illshaped feet and an awkward gait, may all be due, in part at least, to illfitting clothing and, in so far as this is true, can be easily remedied if taken in time. We teachers, then, must use our influence toward having what the child wears as perfectly adapted to his size and shape as is the modern seat on which he sits, and the desk at which he works.

Give the children themselves a chance to talk about dress; not to arouse vanity, or their envy of those who can afford to dress better than they, but to enable them to know what suitable clothing is, how it protects the body and may affect its shape, and how it should be taken care of.

(1)

OUR NEED OF CLOTHING

Choose either a very warm day or one that is decidedly cool on which to begin the talk on clothing in this grade. The topic then naturally suggests itself.

Suppose it is a sultry September morning, when little faces are damp with perspiration and even thin garments seem oppressive.

Have ready a plentiful supply of pictures with which to illustrate the points you wish to bring out. Many of these are suggested in the lesson which has been developed below, and others will be thought of by the teacher as she thinks over what she is to teach.

Such pictures need involve no outlay of money. They can all be cut from papers and magazines, and will serve the purpose intended as well as more elaborate and expensive illustrations.

Show a picture of Cuban or Filipino children who have on little or no clothing. Tell the class where these children live. Ask if they think those countries are warm or cold. Why do you think they are warm?

Hold up the picture of an Eskimo child, dressed in furs from head to foot, and let the children talk about it.

Does this little girl (or boy) live in a warm or cold country? How do you know? Why does she need to wear furs?

What time of the year do we like to wear very little clothing? When do we want thick coats and dresses and warm shoes and stockings?

Have ready the picture of a dog with long shaggy hair, or sketch one on the board. Better still, ask some child who has a pet dog of this kind at home to bring him to school on the day you are to take up this topic.

Talk about the hair covering of the dog. Why does he not need to wear clothes as people do? What kind of a coat does he have to keep him warm in winter?

Tell the children why the dog sheds his hair so freely in warm weather,—because he does not need such a heavy coat in summer and is more comfortable without it. Sometimes he is sheared like a sheep, if his coat is very long and heavy.

Let the children name other animals besides the dog that have a covering of hair instead of having to wear clothes.

Name something alive that wears a feather dress. What animal wears a dress made of wool? one of fur?

What are our clothes made of?

Show pieces of cotton, woollen, and linen cloth, and explain to the children how we can tell one kind from another. Then help them to decide of what material their own coats and caps and dresses are made.

Where does the wool come from of which our clothes are made? Where does the cotton come from? the fur? the silk? the linen? the leather of which our shoes are made?

Show pictures of cotton and flax growing in a field, and if possible bring samples of the raw material into class for the children to look at.

How many of you like to pull off your shoes and stockings and go barefooted awhile on a hot summer day?

Every boy and girl likes to do that. How soft and cool the grass feels to your feet! But sometimes you are very glad to have good warm shoes and stockings to put on. Name one such time.

Why are you glad to have shoes and stockings to wear in the winter? Why do you want them on when you have to walk on sharp stones, or in rough places?

Our clothes protect the other parts of our bodies as well as our feet. They help to keep off the hot sun in summer and the cold winds in winter. They help to keep us from being hurt when we fall, or when we run into things.

SOMETHING TO REMEMBER

We need thick clothing to keep us warm in winter.

We need thin clothing to keep us cool in summer.

Every bird and animal has some kind of a dress.

This may be made of fur, or wool, or hair, or feathers.

Most of our clothing is made of wool, or cotton, or linen.

In very cold countries, people wear clothes made of fur.

Our clothes protect the body and help to keep it from getting hurt.

(2)

WHAT TO WEAR

Adaptation, first to weather, and then to occupation, should be the deciding tests as to the kind of clothing to be worn by any one, and this is the leading thought to be brought out in the lessons on this topic.

Let the class look at the pictures of Archie in his funny playtime costume, shown on page 7. Then tell the story of how this little boy was dressed for different occasions.

A MISCHIEF-MAKER

What Archie liked best was to be doing something all the time. It did not matter much what it was, he could have pretty good fun at anything.

But what he did not like at all was being dressed up in his best clothes, and having to sit still, even for two minutes.

When Archie made mud pies in the backyard, or played in the sand pile, or drew stones in his little wheelbarrow, he wore his play clothes.

He could get them as dirty as he liked and nobody ever said a word, because they were made to play in.

But mother used to look pretty sober when he sat down in the road to play with a clean white suit on. One day when he soiled his clean clothes in this way, he had to stay at home while mother went to call on the cousins without him.

Mother felt as bad as Archie about that, so she thought of a better plan next time. She made Archie a pair of overalls that covered the little fellow all up, from his head to his heels.

After that, whenever he wanted to play when he had his best clothes on, the overalls went on top of everything else, and he was just as ready for fun as when he wore his every-day suit.

An old hat of brother's covered up his curls to keep them from getting mussed, and when he had the footstool strapped around his neck for a hurdy-gurdy, there was no happier boy in town.

If it rained when Archie wanted to go outdoors, mother would put on his rubbers and little waterproof coat, and out he would go carrying his own tiny umbrella, though he did not care whether he got wet or not.

"I'm better off than the birds," he told his mother one day, "because I have clothes for play days, and rainy days, and dress-up days, and they have to wear the same ones all the time. But I like the play clothes the best."

LESSON TALK

Let us make believe we can have as many clothes as we want. What shall we choose first?

What kind of clothing shall we choose to play in? It will need to be made of stout material. Who knows why?

We shall prefer to have it of some dark color. Why not white?

What shall we choose to wear on rainy days?

What shall we do with our overshoes and rubbers as soon as we come into the house? Of course we do not want to keep them on then, because they are no longer needed, and because rubber is too heating to wear indoors.

What would you choose for your best clothes? When are such clothes to be worn? How are they to be taken care of? We must try to keep them clean when we have them on, because it takes somebody a long time to wash and iron them after they have been soiled.

SOMETHING TO REMEMBER

We need different kinds of clothes to wear at different times.

Our play clothes should be made of stout cloth, so they will not tear easily.

They should be of some dark color, so they will not easily show soil.

We should have rubbers to wear when it is wet, and overshoes to wear in cold weather.

Coats and hats and rubbers that are worn outdoors should be taken off and put away when we come into the house.

We should take good care of our school clothes and our best clothes and try to keep them clean and neat.

(3)

HOW CLOTHING SHOULD BE WORN

How many of you know just how to wear your clothes? You all know that gloves and mittens belong on your hands, and that shoes and stockings go on your feet. But that is not all.



Ready for fun

We must be careful to have all our clothes fit just right, so that no part of the body is pinched or pushed out of place.

Put your hands on your shoulders and feel how strong they are. These are the parts of the body to bear the weight of the clothes.

Every girl's skirts should be buttoned to a waist and hung from her shoulders. Every boy's trousers should be kept up in the same way.

We do not need tight belts about the waist to keep our clothes in place, and we should never wear them. If we do, the body trunk can not grow as it ought to do. Then, too, they might help to make our bodies crooked and ill-shaped.

Here is a sheet of brown paper for each of you. Put it on the floor. Now take off one of your shoes and place your foot on the paper.

Take a pencil and draw a line all around your foot. If you have done it well, you will see just the shape of your foot on the paper.

Set your shoe on the drawing. Is it just the same size and shape? Is it larger or smaller?

This will tell you whether you are wearing the right kind of shoes.

Bad-fitting shoes make the feet ill-shaped. Sometimes they cause ugly corns which it will take a long time to cure. Let us all try to keep our feet as smooth and well shaped as a little baby's are.

SOMETHING TO REMEMBER

We need to have all our clothes fit us just right. They should not be too tight or too loose.

Our shoulders, and not our waists, are made to hold up our clothes.

We should never wear tight bands or belts about our waists, or about any other part of the body.

Our shoes and gloves should fit our feet and hands.

Too tight shoes will spoil the shape of our feet. Too tight gloves will make the hands red.

(4)

CARE OF CLOTHING



The happiest boy in town

A story telling how some other child learned to take care of her clothes, will often help to make little ones thoughtful and careful of their own garments.

A PEEP INTO GERTRUDE'S BEDROOM

Would you like to look into Gertrude's bedroom after she is fast asleep? We must step very softly so as not to wake her up.

Her room was neat and tidy when she went into it to go to bed, and so it is now.

When she took off her clothes, she did not leave them in a heap on the floor. She shook them out and hung each one up by itself to air.

Her dress is on the back of a chair, where it

will not get mussed. Her skirts and other underclothes hang over the foot roll of the bed.

Her shoes and stockings are on the floor under the edge of the bed.

We see only one thing that is not just as it should be. She has rolled up her stockings and tucked them into her shoes. What would be a better way?

When Gertrude gets up in the morning she finds her clothes fresh and nicely aired, ready to put on. Then she hangs up to air what she has worn during the night, so these will be ready for her when night comes again.

Gertrude looks very nice when she starts for Sunday school, in her clean white dress, and hat with the blue ribbons on it.

But she knows it took mother a long time to iron the dress, so when she comes home she takes it off and hangs it up on the hook in the closet, and puts on her gingham dress. Then she is not afraid of having anything happen to her best clothes.

SOMETHING TO REMEMBER

It is not a good plan to wear the same clothes at night that we have worn during the day.

When we take off our clothes at night, we should shake them out and hang each piece up by itself to air.

Then our clothes will be fresh to put on again, and not smell sweaty.

During the daytime, we need to air the clothes we have worn at night, for the same reason.

If we take off our best clothes and hang them up before going out to play, they will last longer and look nicer.

We are helping mother and saving her work when we try to take care of our clothes.

WORK OF THE SOLDIER-TEACHERS

THE first American army of occupation in the Philippines contained teachers as well as soldiers. Education followed the flag wherever it was carried. The first people to teach English on the islands were officers and enlisted men in General Merritt's forces, and the work of the soldier-teacher was an important preliminary to the invasion of the organized force of teachers who came later.

The result of the work of the American educators is summed up in the statement that more English is spoken today in the islands than was Spanish after the 400 years of régime of Spain. The Spaniards encouraged a Babel of dialects. They believed that a common language would make the natives too dangerous.

The whole significant story of what American teachers have done is told in the educational exhibit in the Manila cathedral on Plaza Santa

Cruz. Here will be found exhibits ranging from crude blocks of wood turned in the Moro industrial school in Zamboanga, Mindanao, where little savages are taught their "A B C's," to learned theses on sociological questions by students in the Manila Normal School, where Filipinos are taught how to teach. Hundreds of letters from Filipino pupils are part of the collection. These letters are to be distributed to teachers visiting the exhibit, and it is believed that a correspondence will ensue of equal interest and value to the American and Filipino pupils.

It is less than three years since the first transport with its cargo of American teachers arrived in Manila. Today there are 2,900 schools, with over 200,000 pupils in the primary schools alone. The force of 800 American teachers has been supplemented by thousands of intelligent native pedagogues, all teaching the young idea of the coming generation of Filipinos the wonders and the language of the United States.

THE TEACHER'S MISSION

To capture the citadel of the child's mind through love and sympathy ; to lead pupils toward higher ideas of life and duty ; to establish closer relations between home and school and state ; to exalt purity of life and conduct ; to strengthen the moral tone of the community ; to make good men and women ; to establish and dignify the profession of teaching ; to make education attractive ; to magnify the state ; to meet the need for educated citizenship : such is the exalted mission of the teacher.

CHARLES R. SKINNER.

AN AUTUMN SONG

BY CLINTON SCOLLARD

Again the old heraldic pomp
Of autumn on the hills ;
A scarlet pageant in the swamp ;
Low lyrics from the rills ;
And a rich attar in the air
That Orient morn distills.

Again the tapestry of haze
Of amethystine dye,
Encincturing the horizon ways ;
And from the middle sky
The iterant, reverberant call
Of wild geese winging by.

Again the viols of the wind
Attuned to one soft theme—
Here, every burden left behind
Of love, would it not seem
A near approach to paradise
To dream, and dream, and dream !

—In *Woman's Home Companion*.

School Physiology Journal

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"Now all the lovely wayside things
Their white-winged seeds are sowing;
And in the fields still green and fair,
Late aftermath are growing."

AFTER VACATION

RAILROAD stations thronged with happy, sunburned vacationists and a great silence fallen upon streets and parks where, for weeks, the children have been wont to congregate tell a story of vacations ended and of a return to workaday life.

Many a bright thread of joy, of knowledge, of inspiration from great minds, of better acquaintance with nature and with people has been woven into the fabric of life by these swift-flying shuttles of summer days. If the threads have been thoughtfully chosen and carefully woven, the fabric will be a permanent joy to the possessor and to all beholders.

Watch the children as they come back to you and if, perchance, you find in their summer's weaving a dark, imperfect, or unworthy thread, guide them to better choices and more careful weaving. There can be no poor threads or dropped stitches in the fabric of life, if it is to be worthy of its Designer.

CARPE DIEM

DR. ALFRED RUSSELL WALLACE, in his recent book, "The Wonderful Century," enumerates fourteen inventions and practical applications of science and nearly the same number of theoretical discoveries in the nineteenth century, while he finds only a far smaller number of similarly great achievements in all previous centuries.

In the moral and social spheres, the nineteenth century was similarly pre-eminent, and whoever is at all observant of the great currents of the life of the race can hardly fail to perceive that the twentieth century is to be one of social consciousness, a period in which the material developments of the past are to be merely the

stepping-stones upon which the race will rise to better things.

It is not without significance that the world-wide movements against alcohol and other narcotics have even thus early in the century attained great proportions. Humanity must not only have its stepping-stones, but it "must lay aside every weight" if it is to climb to the heights of its possibilities. The waste of mental and moral powers entailed by drink, the expenditure of forces necessary to care for its physical, mental, moral, and economic results constitute a great and constant hindrance to the rapid progress of the race, and it is a good omen that all civilized nations are beginning to recognize the fact and to try to relieve the race of this incubus.

In this effort the school must lead if it is to maintain its boasted position in the vanguard of civilization. Mr. Heymann, in the closing paragraphs of his address, printed elsewhere in our columns, strikes a fine note as to the unavoidable responsibility of the school in making the twentieth century notable as the one in which humanity shall cast off this awful incubus of alcohol and other narcotics which now hampers it in every direction.

"At the moment, the immense importance of the opportunity is hardly ever understood."

It will be to the shame of the teachers of this generation if, twenty-five or fifty years hence, their successors can look back and say that the educators of today failed to understand the immense importance of the opportunity afforded them of carefully and systematically training their pupils to habits of intelligent sobriety. Every bit of heedlessness or indifference in this training now is a mortgage on the work of future educators which they will have to discharge with compound interest. The work is certain to be done sometime, and we believe the educators of today are large-hearted enough, patriotic enough, and Christian enough to do their share of it earnestly and thoroughly.

If you have not already done so, this is the time of the year to organize the year's work in physiology and hygiene. Working to a carefully thought out plan is the secret of success in this as in other undertakings. It saves time, mental wear and tear, and enables the teacher to concentrate her energies and those of her pupils on the main issues. The object of this study is the formation of habits of healthful living. Surely this is worth carefully planning for. Hap hazard, badly-graded moralizing will not secure it. Study the subject, select your objective points, plan how to develop them, then work to your plan, and success is yours.



Grammar Lessons

FOURTH YEAR

THE HOME

ONE of Christ's parables clearly shows the uselessness of trying to get rid of bad habits without at the same time forming good habits to take their place. Our duty is but half done when we have warned children against questionable practices and places of resort. We must provide substitutes that will be not only harmless but elevating.

In the denser parts of a community and in isolated rural districts alike, the child nature craves pleasure and the opportunity to have a good time. This natural instinct must be gratified by wholesome means to prevent its seeking outlets that are unwholesome and debasing.

Men have attempted to solve this problem in very different ways. A certain class have taken it for granted that the saloon in our day is inevitable, and confine their efforts to softening and refining its worst features. Wiser ones are devoting their energies to proper instruction of the rising generation, and to making school and home surroundings so attractive that there will be little temptation for them to seek the saloon.

Such a man as Mr. Riis can already point to the worst tenement in New York City utterly wiped out, and its place occupied by a beautiful little park; to playgrounds established and schoolrooms opened outside of school hours for the use of boys' and girls' clubs; to light and air and sunshine and growing plants introduced into the darkest and most hopeless quarters of the city.

On the other hand, the most that can be hoped for from the "Subway Tavern" and others of its stamp is that they will furnish a retreat where young people may learn to drink "respectably." They offer no guarantee that these same young people will not form habits which must make them feeders of places where respectability is neither sought nor desired; they do absolutely nothing to remove temptation from the young or to make virtue attrac-

tive. On the contrary, they increase the number of saloons that already exists.

Our country's hope for the future lies in the stability of the home and the school and their products, not in the saloon and its products. When the first have been made all they should be, the last excuse for the other will have disappeared.

It is the object of this lesson to show the purpose and universal need of the home, and the part which young people rightly have in its making.

THE PURPOSE OF THE HOME

Children look upon the home as existing as a matter of course. It does not occur to them, unless suggested, that there are reasons for its establishment and maintenance. By showing what these reasons are, we have taken the first step to enlist their interest and enthusiasm in helping to make the home what it should be.

First of all, the home is a place of shelter from storms and too great heat and cold. It is also a protection against robbers and wild animals.

If we walk about in the daytime on a farm, or in the woods, or even through city streets, we see all sorts of birds and animals. If we take the same walk at night, we see only a very few living things, or perhaps none at all. What has become of them?

Ask some one in the class to describe a bird's nest that he has seen, and tell how it answers the purpose of a home. Another, who has at some time found a squirrel's hole or a rabbit's burrow, may explain how each serves as a home for the little creature it shelters.

Why is home as a place of shelter especially necessary for such people as the Eskimos? Show a picture of their snow huts, and let the class find how such a home is the best possible one for people who live in very cold climates.

Why would an Eskimo house be of no use to people living in hot countries? What kind of houses makes the best shelter there? Show pictures of native dwellings in the tropics, and let the class compare them with those in polar countries already examined.

Tell about the early settlers in this country and some of the pioneers of the great west; or read a brief account in some history of the dangers they experienced from savages and wild animals. Why did these people need homes? How were they built? Why close together? Why often made of logs? Show pictures.

In what ways are our homes different from any of these just talked about? What do we

need shelter from? It is not so cold here as in the far north, and not so hot as it is near the equator. There are very few wild beasts to attack us, and every city has its police to arrest burglars and keep them from robbing or injuring us.

Another purpose of the home is to bring the family all together at some time during the day.

When are all the family together in your home? Where do they separate after breakfast? What different kinds of work are they engaged in? How often do you think you would see your fathers or older brothers, if they had no home to come to at night after the day's work is done? There is no other place where we can all meet and really get acquainted with one another, except in the home.

Here, too, we have a chance to learn to be kind and thoughtful of others.

them discover the answers sought in this way, rather than entirely by themselves. But as soon as possible every child in this grade should learn to get information for himself from the printed page. Too much dependence on the teacher represses initiative and unduly prolongs the period of infancy.

Take up again the question of the interior of an Indian's wigwam, after the class have found out what they can about it. Bring out ways in which this is different from our homes.

Has it as many rooms as our houses have? Why not? What rooms do we think are necessary in a house? Why do we need a kitchen? a bedroom? a bathroom? a diningroom? a cellar? closets? a parlor?

What rooms does an uncivilized Indian need? What rooms can he get along without? Name some of the furniture he would be likely to have



A well kept home

OUR NEED OF THE HOME

What would you expect to find if you should go into an Indian wigwam?

Refer the class to histories and geographies for this grade, or to other books in the school library that tell how a wigwam is furnished. As children just entering the grammar school have little knowledge of books and still less of how to use them, they should be given full directions as to how to find this topic, or any other.

Select the books yourself, choosing those written in story form and in simple language, and place them beforehand on a table in the schoolroom.

Give the class the name of the book and the page to which they are to turn to find the matter sought.

With some classes it may be necessary to read the selected passage aloud at first, letting

in his hut? What furniture do we need in each room in our houses?

Why do civilized people require more furniture than savages? Sometimes we go into homes that have too many things in them, things that are neither useful nor pretty, and that only gather dust and make more work for those who take care of the home. The best rule is to have only furniture that is useful in some way or is so beautiful in itself that every one likes to look at it.

OUR PART IN MAKING THE HOME

Cleanliness and order are two of the largest factors in making home pleasant. That children are quick to realize this fact is shown by the eagerness with which they accept invitations to visit in such homes, and by their preference for a well-appointed schoolroom in the midst of pleasant surroundings.

It is only fair to point out that all such homes are *made* pleasant by some one. They do not become such by chance.

Ask some of the children in what homes, other than their own, they would rather live. Let them tell as well as they can why they like the homes they have mentioned. Are they clean and orderly, or mussy? Who keeps them looking nice?

What different kinds of work have to be done in our own homes every day? Refer to the necessary work done in the kitchen in preparing food and clearing it away; to the work required to keep the bedrooms and living rooms of the house in order, all of which must be attended to every day by members of the family or by servants.

Is any unnecessary work ever made in and about the home? How? By whom? What can each of us do to avoid making such work? Speak of cleaning the feet before entering the house; of putting away one's personal belongings when through with them, instead of leaving them scattered about where they were last used; of opening one's own bed in the morning, etc.

Read to the class or tell them of ways in which even unsightly homes and surroundings have been made beautiful by cleaning up yards and roadsides; by mending broken gates or fences; and by replacing weeds or bare earth by green grass and flowers.

Ask the children to look at their own home surroundings when they go home at night and be ready next day to tell some way in which these can be improved. Many of the current magazines contain pictures showing ugly spots which have been thus transformed and made attractive at little or no expense in money.

Tell about the village improvement societies that have been formed in many places, and suggest that your pupils form a home improvement society. Help them to decide what the duties of each member of such a society would be.

Help the class to devise games and amusements that are suitable for the home, especially those in which all members of the family can join.

Our habits have a great deal to do with making the home happy or unhappy.

Name all the habits you can think of that would help to make any home a good place to live in. Name habits that tend to make unhappy homes.

If the tobacco habit is not mentioned as one of the latter class, the teacher should not fail to call attention to it, bringing out ways in which this habit is sure to be disagreeable to some in the family, even if not always to all.

No one can smoke in the home without pol-

luting the air that others must breathe. It is very seldom, too, that any one chews tobacco without soiling the floor or some article of furniture, or the grass in the yard so that no one can sit or even walk on it without soiling the clothes.

The tobacco user usually grows more and more careless about his personal appearance. Let the class, without mentioning names, give instances which they personally have noticed, such as neglect of the teeth and nails, of frequent bathing, change of clothing and the like.

The tobacco user is increasingly selfish and regardless of the rights of other people. Call for illustrations of this fact that different members of the class have seen. Suggest others yourself. For instance, a young man who has just begun to smoke usually asks ladies whom he is with if smoking is disagreeable to them, before he lights his cigar or cigarette. After he has had the tobacco habit for some time, he ceases to be thus courteous and smokes whether others are made uncomfortable by it or not.

Who are the boys of whom one likes to ask a favor in the home, because they are quick to respond? Why are cigarette smokers seldom or never among the number? In what other ways are such boys often selfish and impolite?

Every one in the class knows the old song "Home, Sweet Home." Tell the children something about the author, John Howard Paine, the man who said he never had a home. Leave with the class the closing thought that there is one thing even worse than not having a home, and that is to abuse the one we have by taking all it has to give and making no return, or worse than none.

Little Perry and his playmate, Willie, had been playing school, when suddenly Perry climbed upon a high box and exclaimed:

"Look, Willie, I am going to high school.

Little Chronicle.

"Regal splendors of the fall
Deck the fields and wayside all,
In a gracious opulence."

"Ned," said his father, as the small student came home from school, "which do you like best, arithmetic or geography?"

"I think I like geography best, because arithmetic is just a little too thinksome.

Little Chronicle.

AFTER VACATION

BY NORA PERRY

Here they come, the happy crew,
Merry monarchs through and through;
Laughing, chattering, all together,
In the red-leafed autumn weather.

Once again the streets are gay
As a gypsy's holiday:
Once again has life begun
Fresh and fair beneath the sun.

Yesterday the toiling town
Dull with care was bending down;
Now today it lifts its head,
For today dull care has fled.

BOOK NOTICES

THE ARISTOCRACY OF HEALTH, by Mary Foote Henderson. \$1.50 net. The Colton Publishing Company. Washington, D. C.

In the nearly 800 pages of "The Aristocracy of Health," we have one of the notable books of the day. Starting with the study of tobacco and the long list of favorite poisons by which the human race has again and again been deceived to its own hurt, the author clearly shows that the relation between the nature of these poisons and the degeneracy of the drinker is that of cause and effect. Each of these poisons is discussed at length and the special ways in which it upsets physiological law and order



Ready for the Kindergarten*

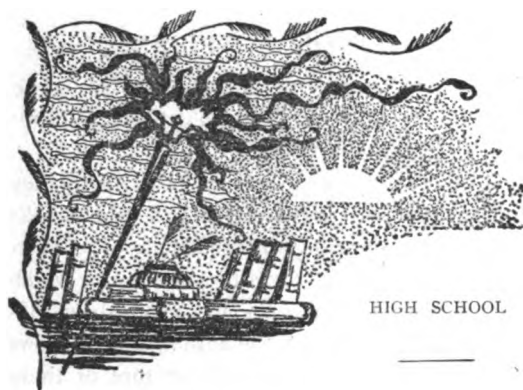
Vanished for the moment quite,
At the sudden sound and sight
Of this heedless, happy crew,
Merry monarchs through and through.

What to them the cares that weigh?
'Tis the breaking of their day,
When, across the morning skies,
Only rainbow hopes arise.

Theirs to be the lot and part
Of bold conquerors at the start;
Every dragon fear and doubt,
Lion-hearted, they will rout.

noted. Degeneracy in other countries is considered, problems of diet are discussed, and finally means of relief, and the hope, through education, of a return to healthful living. It is refreshing to find Mrs. Henderson's clear distinction between food and poison, helpful grapes and harmful wine, etc., and to note the admirable way in which she exposes the fallacy of safety in moderate drinking. The book is eminently readable, clear and forceful in style, and a mine of information to the many who would be glad to return to a simpler, healthier life if they knew the way.

*Courtesy of the *Home Missionary Magazine*



WORKING POWER

TO be well born is the best start in life one can receive. But it is not necessary to despair if deprived of this advantage. It is our duty to find the good that does exist, and so improve and build upon this foundation as to help the youth to rise superior to inherited tendencies and to perform their part in life manfully and with success.

One who accomplishes little may still be held in esteem by his family and friends, but to the world at large a man is valuable only in proportion to his working power, or what he can contribute to the general welfare.

This contribution may be through brain or muscle or conscience, but whatever the form it takes it constitutes the man's chief claim to the consideration of others. The object of education is to make this stock in trade as large as possible.

During the high school course, and even earlier, the great majority of young people must decide to what use they are to put their working power, and strive to make it increasingly effective. Whatever this choice may be in any particular case, all need the healthy body that comes from a practical knowledge of physiology and hygiene; hence, the relation of health to working ability is first to be considered.

ITS RELATION TO HEALTH

It will be a good plan for high school pupils to begin work in physiology by reviewing the general structure of the body, with a view to finding how it is adapted to the many different kinds of work it must do.

With this thought in mind, let them study first the varieties of tissue which make up the body, bony tissue, muscular tissue, nervous tissue, etc., finding how these differ in chemical composition, in structure, and in function, why each is necessary, and what each contributes to the working power of the individual.

The next topic may be how the different

parts of the body are fastened together, and how their movements are directed to enable them to form a useful whole. Call attention to the unskilfulness of every part of the body at first. The little child can not walk, or even put out his hand in the direction he wishes. All his movements are uncertain. Compare this with the precision of the trained worker. Find what makes the difference. How is skill in any kind of work acquired? how maintained?

It is equally important to know what will injure or retard muscular power, and keep one from reaching a high degree of skill. Make a careful study, in this connection, of the old delusion that alcoholic drinks help one to do more and better work than he could do without them. How has this notion been disproved by modern science? Make a similar study of the effects of tobacco.

ITS RELATION TO MENTAL TRAINING

A great problem of the high school is how to hold its pupils throughout the course and induce as many as possible to continue their studies in college or technical school. It can be solved only by showing that mental training has a direct bearing upon working power, and thus upon efficiency and success.

Many a youth at sixteen, by leaving school, can get the pay of an unskilled man, while if he stays in school he gets nothing and is on expense. At the same time, the unskilled worker gets no higher wages at 40 than at 20, while the worker with a trained head as well as a trained hand is increasingly valuable.

See that every high school boy and girl gets this thought; then show that working power is added to by mental training in two ways: first, by studies that bear directly upon the kind of work one means to do in the world; and, second, by studies that first of all broaden and develop the student himself, giving him greater power in all directions. All studies that meet one or both of these tests have a rightful place in every schoolroom. Those that do not should give place to others. How does the study of physiology and hygiene fulfil both requirements?

ITS RELATION TO MORAL CONVICTIONS

Develop this topic largely through illustrations. A carpenter may build a beautiful house, but if the foundations are weak, or if it is out of the perpendicular, the higher and more massively it is reared, the surer its downfall. An explorer may have all the equipment necessary to reach the Pole, but he will never attain his object if his compass deviate ever so little from the true north.

So, working ability, no matter how great, has only a negative value if controlled by wrong motives and devoted to ignoble ends. Superb health and mental ability must be joined to an enlightened conscience to make up the truly noble and achieving man and woman.

AUTHORITATIVE QUOTATIONS

Nothing whatever in physiological chemistry authorizes us to admit that alcohol has a favorable influence on muscular work. Bunge asserts the effects felt are only a symptom of brain paralysis, a benumbing of all feeling of weariness.—E. DESTREE, M. D., University of Brussels.

It is quite an exploded idea that alcohol is of any assistance in difficult work or under special strain: in fact, it is proved by experience that better work is done when alcohol is not used.

This is the unanimous opinion of observers with regard to exposure to great cold. It seems certain, also, that not only is heat less well borne, but that heat stroke is predisposed to by the use of alcohol. As to severe bodily work, we know that athletes when undergoing training give up the use of

alcohol, and records point to the fact that soldiers enjoy the best health when cut off from alcohol in any form.—W. GRIMSHAW BIGGER, M. D., M. R. C. S.

A man feels and thinks himself strong after he has taken some alcohol. Many experiments have been made with regard to this action of alcohol, and the result has invariably proved that at first there is a transient increase of strength, very quickly followed by a loss. We have therefore, the *feeling* of strength gained, with the *reality* of strength lost. Remember, if you are ever tempted to take alcohol when fatigued, that you do so at considerable risk. First, you will be more tired afterward; second you will be tempted to do more than you have actual strength for; third, you will have a tran-

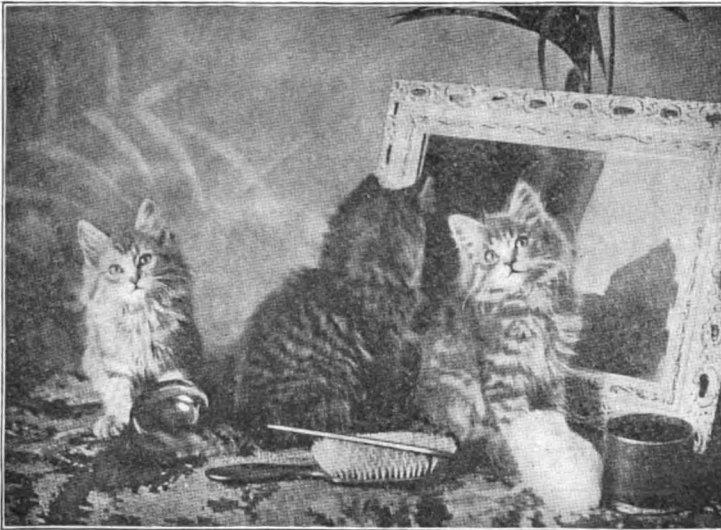
sient slight increase of strength for which you will have to pay the penalty of loss of reserve force. Finally, remember that the proper thing to do when fatigued is to rest and to take food.—A. G. MILLER, M. D., F. R. C. S. E.

Whenever it is desired to secure the highest possible working ability by the organism, tobacco is one of the first substances forbidden.—J. W. SEAVER, M. D.

The idea that tobacco gives increased power to endure either physical or mental hardships is one of the greatest delusions of the age.—THOMAS G. ROBERTS, M. D.

Whether tobacco is smoked or chewed, it has an extremely harmful effect upon men who are engaged in severe physical exertion, and

not least so when the supply of food is not abundant. Tobacco has not only an injurious influence upon the digestion, but it lessens the strength of the body, and reduces capacity for endurance and tenacity of purpose—*The Medical Pioneer.*



Our faces are washed, our hair combed too,
Why can't we go to school with you?

SEPTEMBER

Such days deep hid in woodland ways—
Each morn a lover's story;
Such silvery maze of white moon rays—
Each night a lingering glory.

Such days with asters all ablaze,
Such splendid purple weather;
Such pomp of praise from maple sprays—
And Love and I together.

Such days half veiled in violet haze,
Who pauses to remember
The winning ways of vanished Mays
When he has you, September.

Alice E. Allen.

	GRADE I.*	GRADE II.*	GRADE III.*	GRADE IV.	GRADE V.	GRADE VI.	GRADE VII.	GRADE VIII.	HIGH SCHOOL.
Sept.	External needs of body: clothing, shelter, sunshine.	Behavior at table, at home, on street, in school.	How the body is covered: care of skin.	The home: our need of it; our care of it.	The body's need of food and drink.	Review work of	The senses as a source of knowledge.	Review work of	General structure of the body.
Oct.	Internal needs of body: pure air, food, drink. Danger in wine, beer and cider.	Body as a whole compared with that of animals. Why made of parts.	How the body is moved: use and care of muscles.	Exercise and rest. Play. Work. Study.	Things that are not foods. Fermentation and action of alcoholic drinks.	fifth year.	Tobacco and narcotics.	seventh year.	General processes of the body.
Nov.	Body as a whole: what we can do with it.	Exercise and rest. Growth and repair. Cigarettes.	How the body is held upright: uses and care of bones.	Body as a whole. Parts of body. Uses. Care.	The body's need of cleanliness. Uses and care of skin.	The digestive system of the body.	The brain and nerves.	Nutrition of the body.	Sensation.
Dec.	Position. Growth. Harm in cigarettes.	Wholesome food and drink.	Exercise and rest. How to sit and stand.	Control of body: brain and nerves.	The body's need of exercise in work, play, study. Rest and sleep.	The circulatory system of the body.	The muscles.	The process of digestion.	Body control.
Jan.	Activities of the body. Rest. Sleep.	How we find out things: sense of sight.	How the body is kept alive: heart and lungs.	Movements of body: muscles. Cigarettes.	The body's need of a framework.	The respiratory system of the body.	Bones and joints.	The process of circulation.	Nutrition.
Feb.	Parts of body used in play and work: arms, hands, fingers.	Sense of touch. The skin and cleanliness.	How the body is controlled: brain and nerves.	Needs of the body. Why not alcoholic drinks?	The body's need of a muscular system.	The excretory system of the body.	Body training and care.	The process of respiration.	Fermentation. Bacteria. Narcotics.
Mar.	Parts of body used in moving about: legs, feet, toes.	Sense of hearing. Sense of smell.	How the body may be hurt by alcoholic drinks and tobacco.	Digestion. Circulation.	The body's need of vital organs, heart, lungs, etc.	The controlling system of the body.	Body cleanliness.	The processes of absorption and assimilation.	Personal hygiene.
Apr.	Parts of body necessary to life: head and trunk.	Sense of taste. Things not to be tasted.	How the body is fed. Kinds of food. Table manners.	Respiration. Skin and cleanliness.	The body's need of pure air.	Body waste and repair.	Body building. Cells and tissues.	The process of excretion.	Household hygiene.
May	Care of face, hands, nose.	Beer, wine, cider. The teeth. The voice.	How food becomes part of the body: Work of teeth, stomach, blood.	Special senses. Body framework.	The body's need of watchmen: special senses.	Enemies of the body.	Suitable and unsuitable beverages.	Fermentation.	Municipal and national hygiene.
June	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.

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THE SCHOOL PHYSIOLOGY JOURNAL



PHYSIOLOGY BY CHARTS No. 1

THE CHILDREN
IF WE SAVE
TODAY
WE SHALL HAVE SAVED
THE NATIONS
TOMORROW

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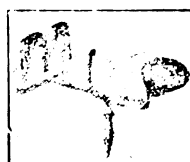
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School Physiology Journal

Vol. XIV

BOSTON, OCTOBER, 1904

No. 2

THE GOLDEN CORN

BY EDNA DEAN PROCTOR

The rose may bloom for England,
The lily for France unfold;
Ireland may honor the shamrock,
Scotland her thistle bold;
But the shield of the great Republic,
The glory of the West,
Shall bear a stalk of the tasseled corn,
Of all our wealth the best!

The arbutus and the golden-rod
The heart of the North may cheer,
And the mountain laurel for Maryland
Its royal clusters rear;
And jasmine and magnolia
The crest of the South adorn;
But the wide Republic's emblem
Is the bounteous, golden corn.

EDUCATION FOR EFFICIENCY

BY CHARLES WILLIAM ELIOT

President of Harvard University

BY efficiency I mean effective power for work and service during a healthy and active life. This effective power every individual man or woman should desire and strive to become possessed of, and to the training and development of this power the education of each and every person should be directed. The efficient nation will be the nation made up, by aggregation, of individuals possessing this effective power, and national education will be successful in proportion as it secures in the masses the development of this power, and its application in infinitely various forms to the national industries and the national service.

This education for efficiency is not a training which should cease with youth. On the contrary, it should be the work of the whole life. All education at every stage comprehends two processes—the training of powers and the acquisition of knowledge.

Childhood and youth are the time for acquiring new mental processes and functions, and for exercising and strengthening the memory. The child initiates new processes of thought and establishes new mental habits much more easily than the adult; but the adult, with trained powers, has an immense advantage over the child in the acquisition of information. The important thing in childhood is, therefore,

to train the child in as large a variety of mental processes as possible, and to establish as many useful habits as possible.

During this training an immense body of information will be incidentally acquired, but not so rapidly as the same person grown up can acquire it. Many an adult reader with trained habits of attention and concentration will absorb the contents of a book with a speed and retentiveness which no child can approach.

The debate over the proper selection of studies in youth has been a long and wearisome one; but at last two propositions are seen to command almost universal acceptance.

The first is that children and young people should study the elements of a considerable variety of subjects, such as language, mathematics, history, natural science, sanitation, and economics; not with the primary purpose of obtaining information on those subjects, but in order that they may sample several kinds of knowledge, initiate the mental processes and habits appropriate to each, and have a chance to determine wisely in what direction their own individual mental powers can best be applied.

TRAINING OF THE SENSES

The second is that training for power of work and service should be the prime object of education throughout life, no matter in what line the trained powers of the individual may be applied.

I take up first the training of the bodily senses and the care of the body. The training of sight, hearing, smell, taste, and touch has been neglected in education to a most extraordinary degree. Indeed, school and urban conditions of life have actually impaired on a great scale the sense of sight—that best window of the soul. Quickness and accuracy in all the senses are of high value to the individual throughout life; and in innumerable cases some slight but unusual superiority in one or more of the senses becomes the real basis of success in life.

The skill of most good mechanics depends on the sure co-operation of a practiced eye and a practiced hand. Most successful surgeons possess, as the basis of their success, an unusual accuracy of sight and touch, combined with a sure memory in regional anatomy and a presence of mind which no emergency can perturb. The locomotive engineer, or the motorman on an electric car, needs a short time-reaction; that is, the interval between his sight of a signal, or of an object that presents itself sudden-

ly, and the corresponding action of his hand and body must be very brief. This is a bodily quality which must be combined with a steadiness of mind and an indefatigable alertness.

The training of the ear should come through reading aloud, reciting prose and poetry, and music. Education should try to increase systematically pleasures through the ear, to compensate for the horrid noises of an urban life.

The sense of smell deserves a careful training, for it is the daily source of keen gratifications, the frequent renewal of mental associations, and the best natural protector against corrupted food, drink, and air.

CARE OF THE BODY

While the body is under training, and after it has been trained, it requires a steady and intelligent care which education for efficiency should systematically teach.

We have just begun to provide medical inspection for children and medical visitation for older students, and to teach systematically the elements of personal hygiene and municipal sanitation. There is no longer any excuse for neglect of these subjects. Twenty-five years ago the medical profession did not know how to prevent the spread of typhoid fever or malarial fever, or how to combat diphtheria, or appendicitis, or tuberculosis. Now medical science knows how to limit these evils, and can do much to prevent their destructiveness.

Within the same period, the knowledge of civilized mankind concerning diets and the regimen of health has increased prodigiously, and the means of heating and ventilating houses, factories, and meeting places have been wonderfully improved. To teach all these things in the whole community should be an important part of education for efficiency, for sickness suspends the efficiency of the individual and premature death destroys it, and when such losses are multiplied by the million the national efficiency is gravely impaired.

If education can succeed in prolonging the period of individual productiveness, and in preventing the breaks in that productiveness which sickness causes, it will thereby increase the total national productiveness and efficiency. It will also add greatly to the public happiness.

Within recent years we have had abundant evidence in our own country and in many other countries that the most effective labor, and the cheapest in proportion to its product, is found where the laboring classes live comfortably, develop their intelligence, and widen their prospects. It is not the cheapest labor that is the most profitable, but the best fed and lodged, the healthiest, the most intelligent, and the most ambitious.

As a rule, the comparison of the educated man of 60 with the same man of 20 is wonderfully encouraging with regard to the average effects on human beings of education and the discipline of life; but such an optimist will confess, if he is candid, that bodily excellencies and virtues count very much toward this favorable result. It seems to me, as I review the life failures I have witnessed, that the only cases of hopeless ruin are those in which the body has first been ruined through neglect or vice, or was congenitally perverted and made the victim of criminal propensities.

If, through drink or licentiousness or other vicious habits, the body of an educated man is ruined, there may be no recovery possible for that individual in this world; but whenever the body has escaped destruction and remains in tolerably sound condition there are few moral wrecks which may not be, to all seeming, completely repaired in this world. These considerations emphasize strongly the importance of making the means of protecting, caring for, and improving the body an important part of education for efficiency.

HABITS OF ATTENTION

The next thing which education for efficiency should attend to is the imparting of the habit of quick and concentrated attention. Without this habit there can be no true economy of time. A prolonged attention is not natural to children, and should not be demanded of them; but quick and concentrated attention may reasonably be expected for brief intervals from every child, and as the age increases the possible period of close attention will grow longer and longer.

The difference between adults in mental efficiency is chiefly a difference in this very power of concentrated attention. The man who has this power will grasp quickly new subjects presented to him. He will do in one minute the work for which an inferior man will need five minutes or five hours. He will effect in every day of his life a great economy of time. There will be no dawdling or vague dreaming in the action of his mind.

The great thinkers and doers, philosophers and inventors, soldiers and rulers are alike in possessing in the highest degree this power of concentrated attention; and in common men and women this is the most valuable of all mental faculties. To rouse, awake, and inculcate this power in the child and the youth should be a principal object in training for efficiency.

We say of the child in whom this power does not seem to exist that he can not apply himself, that he can not be made to study, or that he does not set his mind at work. For every such child the main problem is to discover the means

of interesting him in a mental occupation enough to induce him to concentrate his attention. Skill in discovering the means of interesting the childish mind enough to compel attention is characteristic of the good teacher. If oral instruction does not gain a close attention, perhaps books will; if books fail, carpenter's tools, cook's tools, a lathe, an embroidery frame, or a forge may succeed; if mechanical work does not rouse the mental forces, perhaps drawing or modeling will; if all other means fail, the training of the power of attention may be begun through music.

POWER TO THINK

It may seem strange to say so, but it is perfectly plain to persons who have been carefully observing the rising generations that education for efficiency must especially endeavor to induce young people to think. The efficient man is the man who thinks for himself, and is capable of thinking hard and long. This is a process which requires motive and will power. Out in the world the motives are often pleasure in the exercise of power, or satisfaction in the getting of money or what money can buy. The problem education for efficiency has to solve is how to stimulate young people to think in the absence of these pressing motives of the real world.

One available motive is supplied by experience of the enjoyment or satisfaction which good thinking yields to the thinker; but this motive can be roused to activity in the study of only those subjects which have a natural interest for the young thinker. Hence, the importance of discovering early those subjects for each individual.

Another motive is the conviction that winning the best satisfactions of later life will depend on possessing this power to think. It is this conviction which converts a listless undergraduate into a diligent student at law or medicine. The teacher, the parent, or friend can often do

much to implant this conviction and to guide the pupil into the enjoyment of thinking.

The influence which develops the necessary motive in the thinking child or youth is, in most cases, a personal influence which is partly stimulus, but more example. This influence should rather lead than drive; for the personal initiative in thinking is indispensable. The fortunate child is the one who gets at home this inspiration and guidance toward thinking. This power comes almost unconsciously to the child that grows up in a thoughtful home; but such homes are rare, indeed. If the home can not

yield this influence, the next thing to hope for is that the child may come under the influence of a teacher who thinks and inspires thinking.

ABILITY TO SEE WHAT IS GOOD

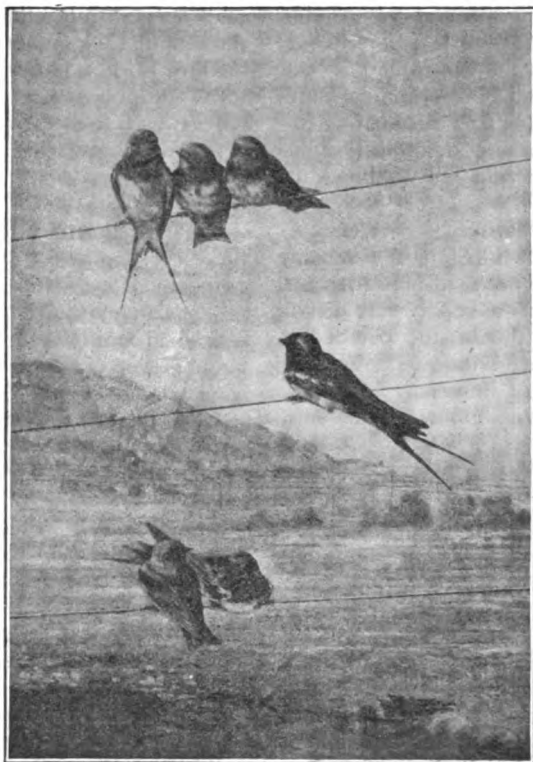
Another leading object in education for efficiency is the cultivation of the critical discernment of beauty and excellence in things and words and thoughts, in nature and in human nature.

We associate the word "criticism" with the discernment of defects and inferiorities, and the mind we ordinarily call critical is apt to have a keener scent for faults, mistakes, and offenses than for merits, wise judgments, and right actions; but the faculty for discerning quickly and surely excellencies

and virtues in persons, peoples, nature, and art is an immeasurably more valuable and useful faculty than the faculty for seeing weaknesses and sins. It ought to be carefully and incessantly cultivated by school, college, and the experience of life, for it is capable of contributing greatly to the happiness as well as to material success. The faculty of discerning and using conspicuous merit in other people distinguishes the most successful administrators, rulers, and men of business.

WISE ENJOYMENT OF LIBERTY

Another faculty which all schools and col-



"When autumn scatters his departing gleams,
Warn'd of approaching winter, gather'd, play
The swallow people."

leges, all churches and all social institutions should cultivate incessantly is the judicial faculty for the wise enjoyment of liberty. For savage or semi-civilized men, and for some children who pass through barbaric stages of development, authority is needed to restrain them from injuring themselves or others; but the diminishing part played by authority in the family and the commonwealth, and the increasing room and need for individual liberty are characteristic of what we call modern civilization. The reason is that the will power of the individual is the taproot of all his growth in character and efficiency.

Authority curbs the will power of the individual; liberty gives it play and exercises it. Therefore the training of the will to the wise use of liberty is the great means of developing individual strength of character and national greatness. The child or youth of weak will is the one that his teacher will find most difficult to train or to inspire.

The nation that is impulsive, flighty, fickle, and hysterical will go down before the steady, considerate, phlegmatic, and resolute nation. Whatever else a school or university may do for its pupils, if it does not implant the love of liberty and cultivate the lawful and productive use of liberty, that school or university will have failed to render its highest service to the youth under its charge.

The wise use of liberty, whether by an individual or a nation can be learned only by practice, and through the passing down from generation to generation of a gradually accumulated stock of public liberty.

THE LOVE OF TRUTH

The implanting of the love of truth as the opposite of error and of falsehood is surely one of the greatest contributions that education can make to individual efficiency; for the human powers, if they are to be efficiently used, must be exerted in accordance with the natural and the moral law, or, in other words, in accordance with the facts of the world.

If the primary school teacher longs to stir the sluggish mind of one of her scholars, she must first find out what the sluggishness is due to—to poor food, to bad air, to adenoid growths, to astigmatic or nearsighted eyes, to dull hearing, or to fear, or shyness, or a broken will. She must find out the facts in the case before she can deal with it. She must learn the truth about that child before she can set it free. In order to cultivate the love of truth, it is of the utmost consequence that children should study things as well as words, external nature as well as books, events which take place before their eyes as well as stories of long past events.

With the love of truth often goes the love of freedom; and these two loves together are capable of inspiring and directing the most efficient human lives. That is a wonderful prophecy that "ye shall know the truth and the truth shall make you free."

It follows from this doctrine that the most important quality in a teacher, whether for children or for adults, is genuine and transparent truthfulness. No other qualities, however brilliant, can compensate for the absence of this quality in a teacher. In the same way, and for the same reason, no quality is so valuable as truthfulness in the leaders of a free people, simply because truth telling and truth doing lie at the foundation of national efficiency. In the modern world a nation is effective in proportion to its truthfulness, or, in other words, in proportion as it keeps its thinking, speaking, and acting in accord with facts.

THE MOTIVE POWER OF ENTHUSIASM

Finally, education for efficiency should supply every pupil with the motive power of some enthusiasm or devotion. The real motive power in every human life, and in all national life, is sentiment; and the highest efficiency can not be produced in any human being unless his whole character and his whole activity be dominated by some sentiment or passion.

An evil passion may give great physical and intellectual powers a terrible efficiency. A good passion can make ordinary talents extraordinarily effective. A life without a prevailing enthusiasm is sure not to rise to its highest level.

In almost all great men the leading idea of the life is caught early, or a principle or thesis comes to mind during youth which the entire adult life is too short to develop thoroughly.

Most great teachers have started with a theory, or a single idea or group of ideas, to the working out of which they have given their lives.

Among men of science the instances are innumerable in which a whole life has been devoted to the patient pursuit of a single vision seen in youth. For common men and women two or three of the common loves will suffice—the love of family and home, of school and church, of nature and books, of private and public liberty, of truth and justice.

For us teachers it is indeed an inspiring fact that effective and enduring enthusiasms spring up spontaneously, or may be implanted, in early life; for without them education can not procure the highest efficiency either during youth or for the after life. Education for efficiency must not be materialistic, prosaic, or utilitarian; it must be idealistic, humane, and passionate, or it will not win its goal.

Condensed from the *Brooklyn Daily Eagle*.



Primary Lessons

SECOND YEAR

THE BODY AS A WHOLE

THE Chinese have a proverb that "Patience and perseverance change mulberry leaves into satin."

Here is a miracle indeed, when the tender shoots of a plant are changed into the richest material for our clothing. But what shall be said of the greater miracle by which our bodies themselves are built up out of the food we eat, the water we drink, and the air we breathe? More wonderful still, each act of our lives contributes its part to the formation of character, thus determining what manner of men and women we shall become.

While these miracles work themselves, it is our part to provide good materials and proper conditions for growth, and in this work the child should have a share almost from the very beginning.

It is his body, and he must learn how to use it to the best advantage, how to take care of it, and how to keep it in good working condition.

Suppose he begins the second year of school knowing the names of the main parts of the body, head, neck, trunk, and limbs; why the body is made up of parts, instead of being in one piece; and some of the most obvious ways in which the body as a whole is to be cared for.

The first work of this year may then well be on

(1)

HOW THE BODY IS MADE UP

Call some little child to the front of the room, choosing one that has a fair, smooth skin.

What does Helen have on this morning, children? Why does she need a dress? What does she wear on her feet to keep them warm? What are these long curls good for, besides being pretty to look at?

THE COVERING OF THE BODY

But here are parts of the body that have no dress or shoes to keep them warm, and no curls to cover them up. What is this covering that protects Helen's face and hands?

Where else on our bodies do we find this soft smooth covering? What color is it? How does it look after you have been down to the seashore for the summer, or after you have played outdoors a good deal without your hats or gloves?

Now Helen may go back to her seat, and we will talk awhile about this covering of our bodies that we all have, and that we never take off.

Hold up your hands where I can see them. Does the skin covering fit tightly or loosely on them? Take hold of the skin on the back of your hands. See if you can lift it up, or move it at all.

Open and shut your hands. How does the skin look on your knuckles when you shut your hands? When you open them?

Bend your wrists; your elbows. How does the skin fit over these places? If the skin did not fit loosely over all the bends or joints in our bodies, we could not move these parts easily, and the skin might crack open when we tried to do so.

How many of you ever had a cut finger? How did it feel when the skin was broken? What does the skin do for our bodies when there are no cut or broken places in it?

THE FRAMEWORK OF OUR BODIES

The skin feels soft and smooth when we touch it. Who can find a part of the body underneath the skin that feels hard? What is the name of these hard parts of the body?

We can not see the bones in our bodies, because they are on the inside and well covered up. But we have all seen the bones of different animals, so we know how bones look.

What color was the bones you have seen? Our bones would look pinkish-white if we could see them.

Put your hands on your heads. What is the shape of the bones you can feel there?

Find another part of the body where there are round bones?

Feel of the bones in your upper arm. What is the shape of these bones? Find other long, round bones in the body that are shaped much like the arm bones.

If we had no bones, how would our bodies feel to the touch? Could we stand or run about as we do now? Why not? Tell one reason why we need so many bones.

What do we need besides paper or silk in or-

der to make a good kite? Name something else that needs a framework to hold it up.

THE FLESHY PARTS OF THE BODY

Find parts of your body that feel soft when you touch them. Who knows the name of these soft parts? Give the word flesh, or muscle, if no one in the class can do so.

How do you think the body would look if we had no muscles, and there was nothing but skin to cover our bones? What is one good reason, then, for having all this nice soft flesh on our bodies?

The muscles do something else for us besides making our bodies look better. They help every part to move. We could not raise our arms, if we had no muscles in them; or run or walk, if we had no muscles in our legs.

Find a muscle that you can see swell out when you move it, and grow larger than it was before. Every boy knows where the muscle in his upper arm is, and will be eager to show it.

Have all the children rise and feel this muscle in their own arms.

Let them clasp their hands about the fleshy parts of their legs, and feel these muscles move when they try to take a step.

Where are the muscles that move when we laugh? when we cry? when we scowl? We can be sure that there are muscles in every part of the body that can move, because it is the muscles that do all this work.

* PARTS OF THE BODY THAT KEEP US ALIVE

Put your hands over your nose and shut your lips tightly together. In a moment you have to take them away again to breathe, whether you want to or not.

Watch while I take a long breath. What part of my body swells out and grows larger when I breathe in a good deal of air?

Put your hands on this part of your own bodies and take a long breath. Where does the air go that we take into our bodies every time we breathe?

Give the word, lungs, if no one in the class can do so. Tell where the lungs are, and let the children put their hands again on the chest which holds the lungs.

The lungs are one part of the body that keeps us alive. We could not breathe the pure air into our bodies without them.

Who knows the name of another part of the body that we need to keep us alive? It goes tick, tick, like a clock, all day and all night. Put your hand on your heart. On which side of your body is it?

The round bones of the head form a box that holds something else that we could not

get along without even a single moment. What is it? Why do we need the brain?

If a man is unfortunate enough to lose a leg or an arm he may still get well and perhaps live a good many years. Perhaps he can have a wooden leg that will help him to walk pretty well, or a wooden arm that will help him to do many things.

But no one could live without his head or his trunk, because these hold the parts of his body with which he thinks, and which keep him alive. Nothing can take their place.

PARTS OF THE BODY THAT TELL US WHAT TO DO

Who tells you what to do when you are at home? When you are at school? Who tells you what to do when you are all by yourself?

What part of the body do we use when we think? Where is the brain? Can we see it? Why not?

Put your hands again on the strong box that protects the brain and keeps it from getting hurt. What is the name of this part of the body?

Look at the heads of all the boys and girls in the room, and tell what you think the shape of the head is. Draw a picture of the front of the head; the side; the back.

Every time you want to move your hand or your foot or any part of your body, you do not tell these parts to move or where they are to go, but a message does go to them to tell them this, and the brain is the main office from which messages start.

Perhaps you wonder how these messages get from the brain to the right parts of the body. There are little white cords inside the body that carry them, just as telegraph wires carry messages from one place to another outside the body.

These little body wires are our nerves. Can you see the nerves? Why do you think they are hidden away out of sight under the skin?

It takes a great many nerves to carry all the body messages, but there are enough for every part. See if you can touch any part of your body without feeling it. That shows that every little part has its nerves to tell the brain every thing that happens to it.

SOMETHING TO REMEMBER

Our bodies are made up of skin, bones, and flesh or muscle.

They contain our lungs, heart, brain and nerves.

Our bodies are covered with a smooth, soft skin.

The skin helps to keep the body warm, and protects it from harm.

The bones are the hard parts of our bodies.
We need bones to hold up our bodies and give them shape.

The muscles are soft parts of our bodies.
We need muscles to move the different parts of our bodies.

Parts of the body that keep us alive are the heart, the lungs, and the brain.

We breathe with our lungs.

We think with the brain.

The heart is the body pump.

The nerves carry messages from the brain to all parts of the body.

(2)

WHAT WE CAN DO WITH THE BODY

There are some things in our homes and in the schoolroom that are meant just to be looked at. Name one such thing.

Our bodies are made for a different purpose. They are made to be used in doing something in the world.

What has your body done for you today? What has it done to help somebody else? In what ways has it helped you to have a good time?

Robert may tell something he has done with his hands since he got up this morning.

Ask other children, in turn, to tell what they have done today with the help of their feet; their hands; their arms; their tongues; their eyes.

Name something that grown people can do easily which would be too hard for children to do. What can you do that your baby brother or sister can not?

What can the horse do that no person could do? the squirrel? the bird? Name things we can do better than any bird or animal.

Why does the horse need a stronger body than we have? Why do we need a better brain than any horse?

(3)

CARE OF THE BODY

How many of you have a doll or some other plaything at home that is too nice to use every

day, and that mother lets you play with only once in awhile?

The body is much choicer than any toy that was ever made; yet you always have it with you, in all your work and play. It is never too good to use, and it is much better to give it plenty to do than to use it only now and then.

Indeed, the more we use our bodies without hurting them, the larger and faster they grow, and the more we can do with them; but we must take good care of these bodies of ours, if we want them to last many years and be always strong and ready to work for us.

You do not like to see a doll that is soiled, and has perhaps lost a leg or an arm; or a toy express cart that has but one wheel. Neither does any one like to see the body look careless or neglected in any way.

Tell some of the ways in which we can keep it looking nice, as we all like to see it.

We can keep it clean and tidy,—clean hands and face every morning before breakfast and school, and every night before we go to bed; clean fingernails; clean teeth after each meal; and our hair nicely combed every day.

Show me your teeth now. How many of you brushed them this morning before coming to school? How many have a toothbrush all your own? Ask mother to buy one, and show you how to use it.

Hold up your hands.

How many clean fingernails in the room? Show me again this afternoon, and let me see five on each hand.

There is something else we must do for our bodies besides keeping them clean. We want them to grow fast, and we can help them to do so. What do you do every day that helps to make you larger and taller?

Ask the children to tell what they had for breakfast before coming to school; what they had for dinner and supper yesterday.

Write on the board everything named by any child. Underscore with red chalk all foods in this list that are good for children.

If any unwholesome foods are mentioned, or



"In winter I get up at night
And dress by yellow candle-light.
In summer, quite the other way,
I have to go to bed by day."

any substances that are not foods, tell the children why these are not good, and erase them from the board.

Do the same with drinks. How do we know that we need something to drink? What drink is best to quench our thirst?

Tell why milk, buttermilk, and lemonade are also good drinks. Beer and wine are not good drinks. They do not quench thirst. They do not help the body grow. They often make people like them so well that they can not let them alone.

Tea and coffee are not good drinks for children. Instead of helping them grow, they often keep them thin and make them nervous.

Sometimes boys think it will make them more like men if they learn to smoke. But cigarettes never yet helped a boy to grow. They are much more likely to make him a small, thin man, if he lives to be a man at all.

Boys who want to be fine, strong men, never begin to smoke. They eat good food, and drink water, and let cigarettes alone.

Our bodies need exercise too, to make them grow. They are telling us this every time we want to run and play. When we feel tired, they are telling us that they need rest and sleep.

What games have you played today that will help to make your bodies grow? What errands have you run to help mother or somebody else? In what other ways have you given your bodies the exercise they need?

What time did you get up this morning? How many hours did you sleep last night? Who went to bed first? The first part of the night is the best time to sleep, and that is the time when our bodies should get the most rest.

SOMETHING TO REMEMBER

Our bodies are given us to use for ourselves and to help other people.

We can do only a few things at first, but we can learn to do many things.

Every part of the body should be kept clean, especially the hands, face, teeth and fingernails.

Good food and pure water help to make the body grow. Poor food, and drinks with alcohol in them hurt the body and hinder its growth.

The boy who wants to make a fine strong man will let cigarettes and every form of tobacco alone.

Every part of the body needs exercise to make it grow.

Besides exercise, we need sleep.

Early to bed and early to rise is a good rule for everybody.

AUTHORITATIVE QUOTATIONS

ALL KINDS OF ALCOHOL A POISON

The idea of the toxicity of the different

alcohols, comprising even the alcohol of the most pure wine, is an idea admitted absolutely by all physicians.—A. JOFFROY, Professor of Mental Diseases, St. Anne Asylum, Paris.

Alcohol is a poison to body and soul, it deprives the workman of his skill and working ability, it diminishes his strength, it makes him susceptible to all diseases, it weakens the race.—H. BARELLA, M. D., Royal Medical Academy of Belgium.

ALCOHOL IN BEER AND WINE INJURES DEVELOPMENT

It is inexcusable to give beer or wine to healthy children; the use of alcoholic drinks exerts an injurious influence upon the mental and physical development of children, and leads to the formation of bad habits.—DR. FIELDER, Med. Counsellor and Supt. Dresden City Hospital.

ALCOHOL PREDISPOSES TO DISEASE

Drinking children fall ill much more readily than those who do not drink, and their illnesses are apt to be more severe and more often fatal. This was very evident in the children's hospital in Berne during an epidemic of diphtheria.—ADOLF FRICK, M. D., University of Zurich.

MY BODY

All this is my body from my head to my toes,
Made of bone, skin, and muscle, as every one knows.

At the top is my head with its covering of hair,
Which we all should remember to brush with great care.

Here in front is my face which should always look bright,
For a frown or a pout would disfigure it quite.

It has forehead, temples, two bright eyes, and a nose,
Brows, ears, and lashes, we must not forget those.

My nose has a bridge, and two nostrils besides,
And here are my cheeks which are placed at the sides.

My mouth has two lips, as you very well know,
A little pink tongue, pearly teeth in a row.

All I hear and see with my ears and my eyes
Will help me each day to grow learned and wise.

My mouth and my nose must do their part well,
For how, without these, could I eat, talk, or smell?

To the right, to the left, now up, and now down,
My neck moves my head, and lets it turn round.

The largest part here is the trunk part you see.
It always reminds me I am built like a tree.

For here are my limbs, both upper and lower,
Right, left, two of a kind, I do not need more.

Then the fingers and toes spreading out like a twig ;

There are ten of each kind, though they're not very big.

Back to back, palm to palm, my hands I can lay.

They are useful to me in my work and my play.

Three parts has each limb : arm, forearm and hand ;

Also thigh, leg, and foot ; on the last one I stand.

The elbow unites arm and forearm, you see,
While the thigh and the leg are joined at the knee.

Just between foot and knee the ankle is found.
Both this and the wrist are slender and round.



"A wistful charm in the tender sky, and a dreamy unreality!
Floating airy, fairy things, soaring high on gauzy wings
These, the spirits of the flowers, that once clothed the summer bowers!"*

In the trunk, at the left, hear the heart "pit,
pit, pat."

By day and by night it is sure to do that.

Watch my lungs, how they swell when I breathe
long and deep !

My chest rises and falls even when I'm asleep.

Of this wonderful body there is much I could
tell.

My shoulder, my elbow, my wrist joints as well,

They help me to move and bend as I please.
Whenever I wish, I can do so with ease.

Just look at my fingers ! I can move one or
all.

How bad it would be, were I stiff like a doll !

I must not forget one more fact to tell :

Besides ankle and foot I have hip joints as
well.

My foot has an instep with broad spreading
sole.

With five toes and a heel, this makes up the
whole.

For standing, for walking, for running with
speed,

My feet do my bidding and go where I need.

Much more might I tell of this body of mine,
If I only might take a little more time.

But let me remember that God meant me to
make

A strong man or woman, so I must care take.

Selected.



Grammar Lessons

FIFTH OR SIXTH
YEAR

ALCOHOLIC DRINKS

PRESIDENT Hadley, of Yale University, recently said: "When the common people get possession of all the facts touching the nature of alcohol, they will drive every saloon out of the country."

One of the objects of the public school study of temperance physiology is to put the common people in possession of these facts, and, furthermore, to acquaint them with the effects of the beverage use of alcohol on the human body, and the relation of moderate drinking to drunkenness.

All these facts are known, and all have been put into popular language, graded to the understanding of all classes of pupils. The way is thus open for almost universal education in this matter which touches so closely the health, the intelligence, and the morals of every community.

Two things must constantly be kept in mind as these topics are taken up:

In the first place, the teacher must guard against any monotony in the classroom. While theories change from time to time, and additional facts repeatedly come to light as a result of improved methods of study and wider experimentation, the properties of alcohol remain the same, and also its effects on the body. Hence, in the main, the same body of truths must be taught year after year in this study, just as is the case in arithmetic.

But while the subject matter varies little, each year brings a new set of pupils as much in need of this instruction as any in the past. This in itself should be enough to rouse enthusiasm and keep our teaching out of the ruts.

The other factor which must not be neglected is the special fallacies which need correcting in every community. Sometimes the impression prevails that home-made beer and wine do not contain alcohol unless this has been added in the making. Again, it may be thought that there is no harm in moderate drinking, but only

in the abuse of liquor. In other cases, the notion must be combated that all drinks made from good fruits and grains are equally harmless and wholesome.

One or more of these mistaken ideas is almost sure to have found footing in every part of the country. Only as such fallacies are watched for and dispelled by knowledge of the facts will a firm foundation be laid for the principles of true temperance.

In his study of food and drink, the pupil learns that both are needed to keep people alive and make them grow. He learns that fruits and grains are valuable food stuffs, and that wine, beer, cider and other fermented liquids made directly from these foods are not only useless as such, but actually harmful.

If he thinks about the matter at all, he wants a reason for such a contradiction of terms; if he neither thinks nor cares, now is the time to waken his interest and give him right notions.

A good way to introduce the subject is to take up first some of the common ways in which food spoils if left to itself, and find out the

CAUSES OF DECAY

Bring into class an apple and a piece of rock about the same size. Pass both around for the pupils to examine.

As we feel of them now, both are firm and hard. But suppose we put them away on a shelf for six months or more. Will they remain as they are today? What change will take place?

Let the class name or write a list of familiar substances, like the apple, that decay or go to pieces in time, and another list of substances, like the rock, that do not change.

Give the name, organic substances, meaning those made up of different parts or organs, to the first class, and inorganic substances, meaning those which are not thus made up of different parts or organs, to the second class.

Call for ways in which organic substances differ from inorganic. Let the class first tell all they can from observation, then send them to dictionaries, their physiologies, and such other suitable reference books as may be had.

See that all understand that the essential difference lies in the fact that organic substances whether animal or vegetable are, or have been, alive, and that after life ceases they begin to decay; while all inorganic or mineral substances have never been alive, and hence do not die or decay.

At this point some one is likely to ask why it is that living things do decay. If not, suggest this question and help the class to answer it.

Why does not the apple keep its size and shape as long as the rock? Why do vegetables

decay, and meats spoil, and bread and cake mold, and milk sour?

The microscope has helped us to answer these questions. If one can be borrowed, let the class look through it at a piece of moldy bread or cheese. If not, tell them that these soft fluffy masses are a kind of plant that is alive and grows. We can see it grow from day to day, until it entirely covers the bread or whatever it has fastened itself upon.

It must eat in order to grow, and it gets its nourishment from this bread, just as we do when we eat bread or other food. If we leave the bread undisturbed long enough, the mold will eat it all up.

Everything that decays does so because it is fed upon and taken to pieces by some lower form of life, either plant or animal. These tiny organisms have different names, molds, fungi, yeasts, ferments, bacteria.

Have the class look up the meaning of each of these words, and find in what ways these microbes, or tiny living things, are alike, how they differ, and the kinds of food that each lives upon.

Talk first about their good uses. Certain kinds of bacteria give butter and cheese their delicious flavors; others make vinegar. Yeast makes bread light. Some of the higher fungi like mushrooms are good foods in themselves.

Molds and bacteria are useful in ridding the world of dead matter. When the leaves fall in the autumn they are soon taken to pieces by these tiny organisms and made over into rich fertile soil in which new plants can grow. If an animal dies, we know that it decays and disappears. That too is the work of bacteria.

But in other ways these microbes are a great trouble, because they eat up the food that we want for ourselves. For this reason we must know how to get rid of them. We know that food will keep longer in a very cold place than where it is warm. This is not because bacteria are killed by ordinary cold, but because they do not eat or grow unless it is warm.

Help the pupils to think why fruit and vegetables will keep sweet if they are sealed up tightly in a can. Why is it important to see that all fruit jars are perfectly clean before using, and that they too are heated before the hot fruit is put into them?

Ask the class to find out at home how different kinds of food may be kept from spoiling. One pupil may learn in this way how and where bread will keep longest without molding; a second may find the best ways of keeping milk sweet, and others may come prepared to tell how fruit, vegetables, meat, etc., may be preserved as long as possible.

After such preparatory study of the changes

caused in foods in general by bacteria and other microbes, the class will be ready to study the special ways in which fruits and grains are changed when made into alcoholic drinks.

ORIGIN OF ALCOHOLIC DRINKS

Every one knows that cider and wine are very different substances from pure apple and grape juice, but nobody knew just what made this difference until the microscope showed that it was caused by the same tiny yeast plants which we have found are one kind of microbes.

You know how yeast looks when great numbers of these plants are dried and pressed together into a cake, such as is used in making bread, but each plant by itself is too small to be seen without a microscope.

Have ready a yeast cake to show at this point in the lesson. Pass it around for all in the class to look at and examine.

Ask the pupils to find from their books and by inquiring at home, how yeast is used in making bread. Will the sponge rise if kept in a cold place? Why not? What are the conditions necessary to get light, sweet bread dough?

Tell the class about the food on which the yeast plants live. They must have sugar in some form, and moisture, in order to grow rapidly, and they must be kept in a warm place. There is a little sugar in the bread dough and more is formed from the starch in the flour. The yeast plants take this sugar to pieces, use a part of it for their own food, and break the rest up into two new and very different substances, alcohol and carbonic acid gas, neither of which is at all like the sugar it is made from.

Refer the class to their books to find a description of both these substances, and also what becomes of each in the bread.

In the same way, guide their study of the use of yeast in beer-making, asking the pupils to find how the grain is prepared, where the sugar comes from that serves as food for the yeast, and what becomes of the alcohol and carbonic acid gas in this instance.

Make sure that every one clearly understands the important difference between bread-making and beer-making. In the first, it is the carbonic acid that is wanted. This puffs up the bread dough and makes it light. Then the dough is put at once into the oven and baked, in order that the heat of the oven may cook the dough and drive off all the alcohol into the air. When the bread is thoroughly baked there is no alcohol left in it.

In beer-making, it is the alcohol that is wanted. The carbonic acid gas bubbles up to the top of the liquid and disappears into the air. The alcohol stays behind in the beer, and is bottled and sold with it.

When this distinction between bread-making and beer-making is well understood, have the class find from their books how wine and cider and other alcoholic drinks made from fruits are prepared.

No yeast is added in these cases, but yeast is necessary to ferment the sugar in these juices and change it into alcohol. Where does this yeast come from? If we set a dish of fruit juice almost anywhere, it will soon ferment and alcohol will be formed in it. This shows that there must be ferments, or wild yeasts as they are sometimes called, always floating in the air, ready to grow and multiply as soon as they get into any sweet liquid like fruit juice.

This is the reason why nobody has to put yeast into these juices to make cider or wine. There are always enough floating about in the air to ferment them and form alcohol.

REASONS FOR TOTAL ABSTINENCE

If every point in the preceding lessons has been thoroughly explained and talked over in class, it will now be plain to all that wine, beer, cider, and other fermented drinks contain a new substance, alcohol, that was not found in the fruits and grains, and is not found in bread.

The next step is to learn the nature of this alcohol, and thus find whether the beverage use of drinks in which it is found is safe or dangerous.

Send the pupils to their physiologies to find what these say about alcohol. Let them consult also in class medical dictionaries and other reference books that may be accessible, and have the authoritative quotations which accompany this lesson read aloud and explained.

They will find that all tell the same story,—that alcohol is always a poison. Since this is the case, no one can drink even one glass of beer, or wine, or cider, or any alcoholic drink without taking some of this poison into his system.

Make it plain to all that it is possible to take a little of almost any kind of poison without feeling any ill effects, and there is so little alcohol in one or two glasses of any of the lighter alcoholic drinks that the drinker may not feel any worse after drinking this amount than he did before. He may even think he feels better.

The trouble is that very few people stop with one or two glasses. They want just as much tomorrow and the next day, and before they know it there comes a time when they must have three or four glasses, and by and by that will not be enough, because alcohol is a kind of poison that has the power to create a craving for itself that is never satisfied.

Emphasize this point by reading aloud the old story of Gulliver's experience with the pigmies. When they began to bind his arms and legs

with their tiny cords, he laughed and made no attempt to free himself. But they added strand after strand until he found, to his horror, that he could not rise or break his bonds.

How is this like the fate of the man who begins to drink and keeps it up day after day? What kind of appetites should we form? What kinds should we keep free from?

A clever Frenchman once said, "Most people use their first years to make their last miserable." We shall be equally foolish if we form the habit of wine-drinking or beer-drinking while we are young. Instead, let us now form the habit of total abstinence from every drink that has even a little alcohol in it. If we do this, we shall be using our first years to make our last happy.

AUTHORITATIVE QUOTATIONS

ALCOHOL USELESS AND DANGEROUS

It is said that alcohol is a tonic, a stimulant, a comforter, that it is suited to all ages and climates, to man in health and sickness. Today science has demonstrated that alcohol does not possess any of the beneficial properties that have been falsely attributed to it, that it is useless and dangerous.—DR. DEVAUCLEROY, Professor of Hygiene in the Military School of Belgium.

NO AMOUNT OF ALCOHOL SAFE AS A BEVERAGE

To state that alcohol in any quantity is safe is a woeful misinterpretation. No one can yet state at what point the secondary injurious effects begin, and no one can state what is a small and what is a large dose.—H. W. CONN, M. D., Wesleyan University.

USE OF WINE LEADS TO ITS ABUSE

Wine, like the other alcoholic beverages, leads to the abuse of itself, and tends to place a man in a state of irresponsibility. There were drunkards in all countries of vineyards long before any one drank beer and brandy.—GUSTAV VON BUNGE, Professor of Physiological Chemistry, University of Basel.

Naturally the lighter alcoholic drinks cultivate a taste for the stronger liquors. Those who make statements in conflict with the indubitable facts of statistics must either be ignorant of these facts or else attempt to pervert them in order to apologize for their own drinking habits.—L. MEYER, M. D., University of Gottenburg.

MODERATE DRINKING LEADS TO DRUNKENNESS

The risk run by any one who begins as a moderate drinker of ending as a drunkard is a very real one, is increasing year by year, and is increasing in a form that is most dangerous to the national health and happiness.—WILLIAM CARTER, M. D., LL. B.

The moderate drinker injures his tissues by degrees. He may appear unharmed; he fancies he is, and scouts the idea that his drink is injuring him in the slightest. But sooner or later illness comes on, and the organs which have been slowly weakened are unable to assist one another to throw off the disease, and so he succumbs, when as an abstainer he could have pulled through. Some will die young, but a thousand teetotalers will have more years of life to share between them than a thousand drinkers.—*The Medical Pioneer*.

It is not the man who occasionally becomes intoxicated who gets into trouble, but the man who drinks much and never gets drunk that becomes a candidate for disease. His are the bloodvessels that early grow less elastic and more brittle, his are the chances for apoplexy, and consequent infirmity, his are the weakened will power and moral force, his are the nerve tissues that show slight vitality.—ALBERT E. STERNE, A. M., M. D., Professor of Nervous and Mental Diseases, College of Physicians and Surgeons, Indianapolis.

That alcohol misused in an immoderate quantity causes many deaths has no doubt been noticed at last. But even moderately used it shortens life.—A. FOREL, M. D., Professor of Psychiatry at University of Zurich.



"Gipsy Autumn, in beauty glowing,
Is treading the courts of the royal year."

OBJECTIONS TO A TWO-BOOK SERIES

WE regret to learn that the Text-Book Commission of Tennessee, in spite of the wise and persistent efforts to the contrary of Mrs. Holman, President of the state Woman's Christian Temperance Union, aided by the teachers of the state, has recently adopted the Krohn Physiologies, a two-book series.

In order that the future men and women of Tennessee should know why they should obey the laws of health, including those that teach abstinence from alcoholic drinks and other nar-

cotics, the law of the state requires "all pupils in all schools" to be taught this branch, that is, the physiological reasons for obeying the laws of health.

In the public schools of Tennessee, as in other states, there are usually from seven to eight different classes or grades of advancement to which this instruction should be adapted. Such adaptation is impossible with a two-book series. Children of the fourth school year can not understand matter that is adapted to children of the sixth year, and sixth grade children resent being given matter that is suitable only for those two or three grades below them.

With a two-book series, either the same matter must be presented over and over in different grades, thus producing weariness and disgust in the mind of the pupil, or it must be omitted in some grades, thus depriving such pupils of needed instruction. Such a course is an evasion of the spirit of the law, and a distinct loss to the children and the state soon to be governed by them.

These objections to a two-book series are greatly intensified in the case of the Krohn physiologies, because each book is largely a duplicate of the other. More than two-thirds of the smaller book consists of sentences and paragraphs taken

from the larger one without change in wording. A pupil who had studied the first book of the Krohn physiologies, when given the second book indignantly exclaimed, "I had all that when I was down in the lower grades." Such tiresome repetition, in place of new and interesting matter adapted to grade, will greatly weaken the effectiveness of the teaching.

Happily, the law of Tennessee allows the use of supplementary books that may not have been recommended by the state Text-Book Commission. Hence, the friends of temperance in that state should make every effort to get the Oral Lesson Book into the hands of primary teachers, and some good fourth year primer into the hands of pupils in the fourth school year.

Continued on third page of cover.

School Physiology Journal

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AUTUMN GLOW

If this the preface be of death,
In crimson, green and gold,
What wondrous art illumineth
The story still untold.

JOHN B. TABB.

TOTAL ABSTINENCE THE LOGICAL RESULT

THE story of science concerning the use of alcoholic drinks and other narcotics is only one feature of the large subject of physiology and hygiene which is a compulsory study in the public school's of this country.

President Eliot's article, quoted in part in this JOURNAL, ably sets forth the importance of the education of the senses and the relation of such education to individual and national efficiency. For more than a dozen years systematic instruction in the physiological reasons for the right care and development of the senses, brain, and other organs of the body has been a legally required part of the public school education of the children of this nation.

So effectively has the fact been instilled into the intelligence of these children that alcoholic drinks, even in what are called moderate amounts, injure sense perception and accuracy, that prohibition of the use of such drinks for employes is today a marked feature in American industries. Consequent widespread elimination of the impairment by alcohol of the working ability of the American workman, as a result of this anti-alcohol education in our public schools, is recognized by the nations of the world as one reason for our commercial success.

Not every one may yet believe in total abstinence, but it is hard to see how those who advocate training for the highest efficiency of the senses can long fail to do so when scientific authorities so largely agree with Professor Abel of Johns Hopkins University, one of the Committee of Fifty's own experimenters, who says,

concerning taking alcohol during the performance of the duty at hand :

"In all those vocations of life where keen senses, sharp attention, the ready and immediate action of clear judgment, or great concentration of the mind are called for, alcohol in any form or amount is injurious."

KNOWLEDGE THE FIRST STEP

A MEMBER of the Mosely Educational Commission, after visiting the public schools of this country, is quoted as saying : "The Americans seem to have four R's in their public school course, while we in England have but three. Their fourth R is the Reason for things."

This was a high compliment to our public school education and to our teachers. The mission of education is the impartation of knowledge and the development of the reasoning faculties for the application of knowledge to the problems of life. Thus knowledge becomes power. But knowledge is the first step. The engineer must know the laws that govern the structure and functions of his engine, and what will help or hurt its work in order to understand how to secure its highest efficiency.

The nation that would have a strong, efficient people must teach its children, through the schools, the physiological reasons for obeying the laws of health, laws that inhere in their being and that must be obeyed to secure strength and efficiency. It must teach also what will help or hurt that efficiency. Such instruction must shape the physical habits of the people. To do this, it must begin in the plastic period of childhood, in the earliest years when the schools can reach the children, and must continue as a progressive study through the habit-forming portion of school life, until as much of the subject is covered as is adapted to public school instruction.

Such study of the physiological reasons for obeying the laws of health, including those that teach abstinence from alcoholic drinks and other narcotics, is sure to be effective, for it appeals not only to the reason of the child but also to the strongest human instinct, self-preservation.

NECESSITY FOR BOOKS IN TEMPERANCE PHYSIOLOGY

The truths on this subject are scattered through a widely diversified literature. They must be gleaned from anatomy, physiology, chemistry, biology, toxicology, pathology, and hygiene. To expect each teacher to gather the facts from all these sources as he goes along with his school work and put them into effective lessons for the classroom is to expect the im-

possible. As well ask the teacher of history to gather from the archives of all nations the story for each lesson in history, as to expect the teacher of temperance physiology to attempt a similar task. Such work must be done for pupils and teachers in this study just as it is in history, geography, and arithmetic.

Well graded series of school text-books in physiology and hygiene, including the nature and effects of alcoholic drinks and other narcotics, for teachers' use and for the use of pupils who now use books in other subjects, are tools as necessary in the right education of the people as are the saw, plane, and hammer in the building of houses which are to be the homes of the people.

IMPORTANCE OF A GOOD COURSE OF STUDY

The *Congregationalist*, a religious paper published in Boston, says:

"A Commission appointed by Kaiser William to investigate the drinking habits in Germany has reported that the increase in the consumption of alcoholic liquors in the empire has amounted to \$125,000,000 a year. The Kaiser is

reported as saying, 'This tremendous guzzling must be stopped somehow!'"

The root of the trouble lies in the fact that the people of Germany believe that the moderate use of alcoholic drinks is, at least, harmless. They like such drinks and use them. Moderate use leads to immoderate use and consequent demoralization, because alcohol, even in the small amounts found in German beer, has the power to create a craving for more that becomes uncontrollable.

Every moderate drinker does not succumb with equal rapidity to this power, but whether or not one is susceptible to the cumulative attraction of alcohol for itself can not be foretold. "He finds out only by playing a game of chance with his own life, which is a dangerous experiment," says Professor Gruber, of Munich. Hence the belief of the German people in the moder-

ate use of alcohol inevitably results in the guzzling which the Kaiser says "must be stopped."

How can this be done? The education of the whole people, through the schools, in the physiological reasons for obeying the laws of health including those that relate to the dangerous character and evil effects of alcohol, even in small amounts as found in beer, wine and cider, will stop it.

Such education places the prohibition in the intelligent choice of the people where it is most effective.

The president of the German Women's Total Abstinence Society, Fräulein Otilie Hoffmann, writes that Dr. Studt, Prussian Minister of Education, has published in the September-October issue of the *Zentralblattes für die gesamte Unterrichts-Verwaltung*, the official monthly instruction sheet for teachers, an abstract of our

American course of study covering the topics relating to the dangers in the use of alcoholic drinks. The December number of the same paper contained a translation of our course of study entire, "for the purpose of showing the contents, scope, and methods



These little children from over the sea
Are as eager to learn as you can be.

of this instruction in the American schools."

This course of study only names the topics that should be taught in the different grades. If there are furnished to pupils and teachers no books telling what is to be taught about these topics, the German teachers will be bewildered by the task proposed. They will be able to do effective work in this study only when good books adapted to grade have been furnished, showing the truths that should be taught on these important topics.

Such books in the hands of every child in the schools of Germany able to read, with instruction according to the best modern methods, will revolutionize the drinking habits of the Fatherland in a way to surprise and gladden the heart of the Kaiser and that of his most gracious and charming wife, Kaiserin Augusta Victoria.

A GOOD LAW USELESS FOR LACK OF BOOKS

In 1892, the Superintendent of the International Department of Scientific Temperance Instruction sent to the governments of the world copies of our American temperance physiology laws, our courses of study, and text-books on this subject. On recommendation of King Oscar, the Parliament of Sweden then in session enacted a statute requiring this study, not unlike the temperance education law passed by the United States Congress applying to all schools under federal control.

Mr. Mats Dalborg, a public school instructor of Stockholm, sent by the Board of Education of that city to study the practical teaching of this subject in American schools, says:

"Sweden has had a temperance education law for twelve years, but it has been only on paper. We have done nothing about enforcing it in the schools. This is not the fault of the teachers. They did not know what to teach. They have had nothing to do with; no text-books. No one in Sweden has gathered up and put into books the truths the pupils in each grade ought to learn, as you have done for the American children."

As there are now a number of Swedish teachers in our country studying our temperance education system, there is hope that this lack will be widely realized and met.

EXCELLENT TEXT-BOOKS ADOPTED IN EDINBURGH

Nearly 15,000 registered physicians, "practically the entire medical profession of Great Britain", have within the last few months signed a petition for the study of the laws of health, including the nature and effects of alcoholic drinks and other narcotics, by all pupils in all the public schools of England, Scotland, Ireland, and Wales. In response to this petition, the city of Edinburgh, Scotland, has adopted our latest and best graded books, the entire New Century Series, for the schools of that city. This is a start, but all Scotland will yet have her own books that will teach both Highlander and Lowlander that pure water is a safer drink than Scotch whiskey.

ANTI-ALCOHOL INSTRUCTION PROPOSED IN ITALY

At an Anti-Alcohol Congress just held in wine drinking Italy, Professor P. Pasquali, Director of the schools of Brescia, in a moving speech proposed that the government introduce anti-alcohol instruction in the schools. This proposition was unanimously approved.

Thus one by one the countries of Europe are coming into line to secure this instruction for their schools, while upon us in America rests the responsibility of educating the representatives

of all lands who have come to us in the reasons for total abstinence from alcohol and other narcotics. In such education rests the best hopes for freedom from the worst tyranny that ever enslaved human beings.

MARY H. HUNT.

THE SLEEPYTIME LAND

BY EUGENIA O. EMERSON

Oh, how do you think the Babies go
To the ports of Sleepytime Land?

Oh, it's not by rail—
They must lightly sail
To that most delectable strand!

Their little boat is a poppy dew;
They glide on the oceans of musk
(The breeze's perfume);
And they breast the gloom
At exactly quarter-past dusk.

They use for a sail a gossamer,
Their oars are just stamens of gold,
And they dip their spars
In ripples of stars—
A load of dreams in the hold.

A cargo, too, of some poppy-dew;
For ballast, the Sandman's sand—
With a winking eye
And a murmured "Bye"
They start for this Sleepytime Land.

If it be worth while to teach a given subject at all, there is probably some ascertainable number of week-hours which may best be devoted to it through some ascertainable number of years.—President Charles W. Eliot, in "Undesirable and Desirable Uniformity in Schools." *Addresses and Proceedings of the National Educational Association, 1892.*"

PHYSIOLOGY TOPICS FOR OCTOBER

PRIMARY—Internal Needs of the Body: Pure Air, Food, Drink. Danger in Wine, Beer, and Cider. Body as a whole. How the Body is Moved: Uses and Care of Muscles.

INTERMEDIATE—Exercise and Rest. Foods, and Substances that are not Foods. Fermentation. Effects of Alcoholic Drinks.

ADVANCED—Tobacco and other Narcotics. General Processes of the Body.

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Continued from page 29.

If the Krohn physiologies must be used, the "First Book in Hygiene" should be put into the fifth and sixth grades and "Graded Lessons in Hygiene" into the seventh and eighth grades, with an indorsed high school book for pupils in the first year of the high school.

We recommend the same procedure to the friends of temperance in Virginia, where, unfortunately, the Krohn books have also been adopted.

The people of Kentucky are to be congratulated that their State Commission, although adopting only two books, selected these from the New Century Series. Each book of that series presents new matter adapted to the grade for which it is written, and no one of the books is in any way a repetition of any of the others. The use of these adopted books in the grades for which they are designed, with a supplementary use of the other books of the series for the remaining grades of the schools of that state during the next five years, will give to Kentucky a generation of sober, strong and efficient young people to bless the statesmanship of the men who made such a wise selection of books for their use.

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With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

Elementary Anatomy, Physiology and Hygiene For Higher Grammar Grades. By Winfield S. Hall Ph.D., M.D., Professor of Physiology, Northwestern University Medical School,
Price, 75 cents

Treated according to the inductive method, beginning with the easily observed facts of plant physiology and leading by comparison up to human physiology and hygiene. Simple illustrations and experiments, but no dissections, are presented in connection with the physiological facts. A particular feature of the book is the lessons on domestic economy which form a noteworthy contribution to one of the most important problems of sociology.

Intermediate Physiology and Hygiene For Fifth and Sixth Year Pupils, or corresponding classes in ungraded schools. By Winfield S. Hall, Ph.D., M. D., and Jeannette Winter Hall, Special Teacher of Physiology, Berwyn, Ill.
Price, 40 cents

The illustrations are a marked feature of this book, including both mechanical diagrams and attractive pictures designed to interest the pupil. Special attention is called to the simple comparisons of the bodies of human beings and of the lower animals. The object of this comparative study is to impress upon the mind of the pupil the unity of nature and to cultivate in him a love and sympathy for the lower animals.

New Century Primer of Hygiene First Book for Pupils' Use. By Jeannette Winter Hall.
Price, 30 cents

A simple and attractive presentation of the elementary facts of physiology for pupils of the fourth year grade. The language used is free from technical terms and readily comprehended by the child, while familiar facts are used to emphasize the principles discussed. Brief object lessons in general physiology are given, together with a simple treatment of the most important laws of hygiene. Contains numerous illustrations and useful and practical suggestions.

Oral Lesson Book in Hygiene For Primary Teachers. By Henrietta Amelia Mirick, A. B., Assistant Editor School Physiology Journal.
Price, \$1.00

A manual for the teacher, containing suggestive oral lessons on the most elementary facts of anatomy, physiology, and hygiene, for the first three years of school life. At the end of each lesson are brief memory points summarizing the most important features. Each day's work is thoroughly planned and made simple and interesting.

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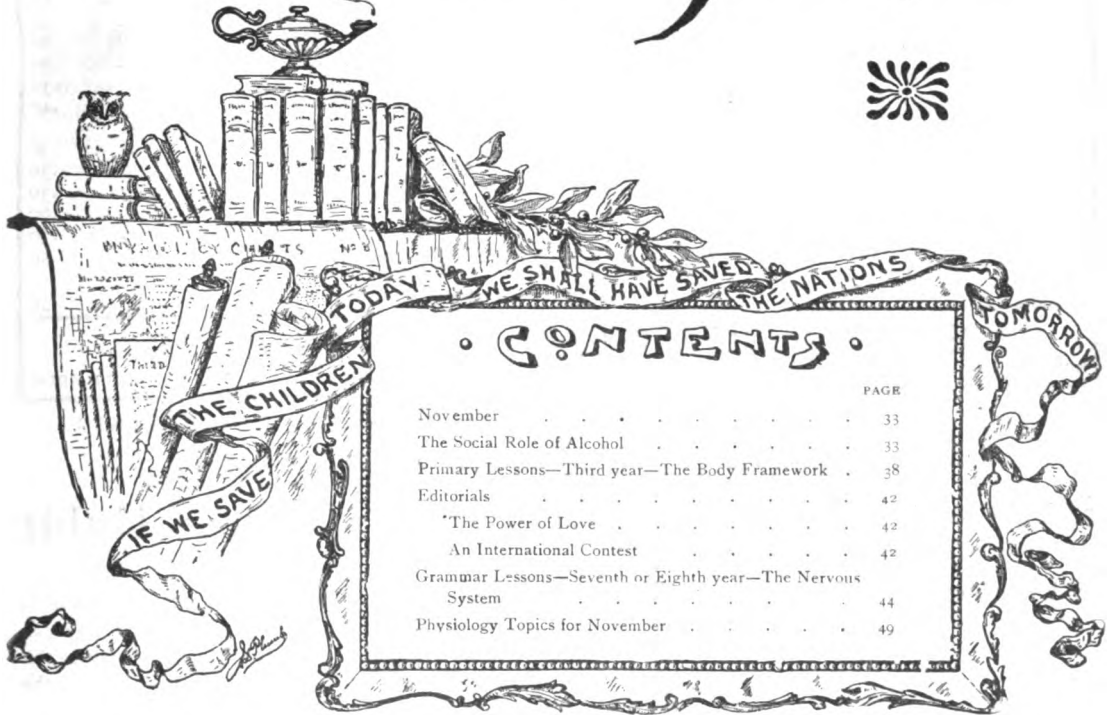
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THE SCHOOL PHYSIOLOGY JOURNAL



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VOL. XIV. NO. 3
NOVEMBER, 1904

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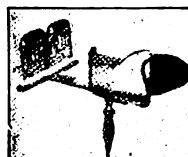
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School Physiology Journal

Vol. XIV

BOSTON, NOVEMBER, 1904

No. 3

NOVEMBER

BY LUCY LARCOM

WHO said November's face was grim?
Who said her voice was harsh and sad?
I heard her sing in wood-paths dim.
I met her on the shores so glad,
So smiling I could kiss her feet,
There never was a month so sweet.

Where short-lived wild flowers bloomed and died,
The slanting sunbeams fall across.
Vine 'broideries woven from side to side,
Above mosaics of tinted moss.
So does the Eternal Artist's skill
Hide beauty under beauty still.

And if, out of some inner heaven
With soft relenting, comes a day
Whereto the heart of June is given,
All subtle scents and spicery
Through forest crypts and arches steal
With power unnumbered hurts to heal.

THE SOCIAL ROLE OF ALCOHOL.

BY AUGUST FOREL, M. D.

ETHYL-ALCOHOL is obtained by the action of micro-organisms upon sweet liquids, that is to say, by fermentation.

Found to some extent everywhere, the ferments have ready access to sweet liquids. Multiplying within these, they break up the sugar found therein into alcohol and carbonic acid gas. Modern chemical processes have made it possible to obtain alcohol very cheaply by distillation from all sorts of gross substances, particularly from such substances as potatoes, beet-root, etc. Nothing is simpler than to counterfeited wine, the product of fermentation of the juice of grapes, with the aid of distilled alcohol mixed with water, essences, and coloring matter.

Alcohol is used in industry as a solvent, a preservative of dead bodies, and is a source of light and heat, a useful role to which no one objects. It is not of this role of alcohol that we wish to speak, but only of it as a fermented or distilled drink.

ALCOHOL THE TYPE OF NARCOTIC POISONS

Alcohol is the type of narcotic poisons, Claude Bernard, the celebrated physiologist, has said.

But unfortunately, alcohol forms a part of the regimen of the majority of men. It is thus a social narcotic poison. For a time, confusion

was caused by accusing as harmful the toxic substances mixed in small amounts with alcoholic drinks. The experiments of Strassmann, of Joffroy, and especially those of inebriate asylums have disposed of that fable, supported at best by those interested in the business of fermented drinks, who try to make the public believe that their alcohol is different from that of distilled liquors. If the drinkers of spirits are, in general, the most degraded, it is because the poor drunkard, having reached the last stage, no longer has money for anything except spirits. But how often it is the use of fermented drinks that begins to drag him to his ruin!

In order to understand thoroughly the social question of alcohol, it is necessary to examine its different aspects.

CIVILIZATION DEPENDS UPON BRAIN WORK

It is certain that the human brain is the transmitter of civilization, since it is the organ of intellect, feeling, and will, in a word the soul. Civilization, then, depends upon the brain work of past and present generations, and consequently upon the hereditary and acquired qualities of our brains. Civilization itself, in turn, rests upon the latter, and at the same time contains elements of progress and of future higher development, along with elements of retrogression and degeneracy. These facts being once recognized, it is the duty of those who govern the people to develop and strengthen with all their might the first named elements, while combating with the utmost hostility the latter.

Like all higher living beings, the human individual is the result of the fusion or conjoining of two microscopic nuclei, that of the male germinal cell and that of the female germinal cell. All the energies of the individual called hereditary, those which determine all the main lines of his form and life, are contained in the two conjoined nuclei. Indeed, while the microscopic male nucleus is no larger than the female and is deprived of all connection with the paternal body, being subject up to the time of birth solely to maternal influences and entirely nourished by the mother, it yet imprints upon the individual, on an average, as much of the character of the paternal as of the maternal ancestry.

According to the influence to which the organs of the individual are subjected, and according to the character of their activity, they develop or atrophy, or become modified, strengthened or impaired. Life and its organs are

strengthened by activity and enfeebled by inactivity; that is a general law.

ALCOHOLIC HEREDITY

An insidious poison like alcohol—having the power of insensibly causing degeneration of living tissues, deluding the brain while paralyzing its innervations, especially of blunting the sensations, a process which is almost always accompanied by an agreeable feeling of narcosis, is especially adapted to cause the gradual deterioration of the hereditary energies of the germ of the animal species which makes a general use of it, a deterioration rendered progressive by the increasing ease with which it can be procured.

A germinal nucleus impregnated with this poison introduces elements of feebleness in proportion as it is degenerated. Even if it unites with a healthy nucleus, the latter can hardly correct the half of the evil.

It is not a case, one perceives, of the simple transmission to descendants of ancestral characteristics, nor of the new combination of the latter. No! It is an instance of a destructive agent coming from without to deteriorate a germ which in itself was good.

But this element once a part of the hereditary mechanism, does not soon leave it. It perpetuates the defects which it engenders, according to circumstances, in several generations. These defects may be—the facts prove it—of a widely different nature, and affect the most diverse organs. Such defects are: general feebleness, dwarfed stature, rachitis, epilepsy, idiocy, weak-mindedness, nervousness, monstrosities.

This is what constitutes alcoholic heredity, so imperfectly understood and so incorrectly interpreted in general.

But, it is said, we eat and drink many other things and not a few poisons without degeneration because of it.

Let us state the matter precisely:

Poisons may be, and very often are, eliminated from the organism without serious consequences, provided that the dose be small or not repeated. But the majority of them create no craving whatever. Man fears and avoids them; their odor, their taste causes a loathing for them. Then too, their harmful effects are very rare and quite accidental.

Even useful and normal foods, including water, cloy when taken in too large a quantity. There is in this fact a regulator adapted to the needs of the organism; a regulator which, in the main, operates in this way for the development of life. Without doubt, idleness, luxury, and lack of struggle for existence lead to sad abuses of diet, but the evil here is very limited.

CHARACTERISTICS OF NARCOTIC POISONS

Quite different is the action of narcotic poi-

sons which delude the brain in all respects, provoke agreeable and deceptive sensations, give the feeling of strength while weakening us, of warmth while carrying off heat, of intelligence while dulling the mind, of the beautiful and the good while causing within us the decay of the aesthetic and the ethical, of will and ability while stealing away the power to act and to resist our baser appetites, of health while making us sick. And further, every narcotic demands more, if not at first, at least when its use has become habitual. It becomes an artificial need, a parasitic friend of which we can not longer rid ourselves, which consumes us by inches while pampering our weakness and lulling us into a sense of security by the illusions which it provokes.

The action of the different narcotics upon the tissues of the body is variable, but the foregoing characteristics are common to them and make of them *social poisons* which brutalize the race and cause it to run down. The habitual use of any narcotic is thus in itself a grave abuse. And the general use leads to accustoming one's self to it so that slight effects are no longer observed, either in one's self or in others. But the facts remain none the less.

Of all these poisons alcohol is the worst, because it not only narcotizes and deceives man, but more than others it makes him brutal, aggressive, criminal, and causes degeneration of his tissues and reproductive organs to a frightful degree. Moreover, the way in which at the beginning it "loosens the tongue and excites it to action" makes of it an artificial means of sociability for those who have nothing to do or nothing to say, and makes them mutually believe that they are witty. It also flatters the palate of its habitués. Finally, sufficiently diluted, it produces only slow and imperceptible effects, especially in those who, least predisposed or least tempted, use it but moderately.

In this way it has been able to infiltrate little by little the customs of our whole civilization, and by degrees to make accepted its brutalities, deaths, crimes, diseases, miseries, and degeneration, thanks to its deceitful insinuations, its siren manners, and especially its false fashionable airs, covered as they are by the pompous etiquette of fine wines, champagnes, choice liquors, and royal beers of Munich and elsewhere.

The ancients saw more clearly than we, and did not believe they ought to acquit wine, while condemning spirits to relieve their consciences. In the sixth book of the Iliad, Hector, overcome at taking leave of his loved ones, is offered wine by his mother. What answers the Trojan hero?

"O venerable mother, bring me no caressing wine to unnerve me and make me forget courage and strength."

WHY ALCOHOL IS NOT A FOOD

Since Liebig's day it has been proved that the greater part of alcohol ingested is burned (oxidized) in the body. Thus it produces heat and energy. Hence people have concluded that "alcohol is a food." This is a sophistry. On this basis, many other poisons (phosphorus, arsenic, etc.) would be foods. To nourish the body without injuring it, it is necessary that the substances oxidized within it do not impair its tissues. Heat an engine with sulphur which corrodes its sides in setting free sulphuric acid; you will make the engine go, it is true, but you will meanwhile destroy it.

Furthermore, it is proved, as far as alcohol is concerned, that its paralyzing effect rapidly annuls its fuel

effect. Under its influence, the muscles, excited at the beginning only, do less work than without it.

Kraepelin, Fürer, Destree, Chauvan, and quite recently Schnyder have proved this experimentally.

To dare to pretend to deny this, basing one's denial upon the experiments of Atwater (who only *re*-proved the combustion of alcohol in the body), as has been done by M. Duclaux, Director of the Pasteur Institute, is to be blinded by prejudice.

Even the so-called light drinks, wine, beer, and cider, taken in moderate doses, such as two glasses of wine or beer, are sufficient to provoke constant symptoms of cerebral intoxication, slowing and disturbance of thought, increase in the number of errors and of superficial associations, constant slowing of the time of psychic reaction, weakening of muscular strength and endurance at the end of 15 to 30 minutes.

Possible the most striking feature is that the subjects upon whom the experiments are performed do not in the least suspect the mental and

muscular loss in their work when they have taken alcohol, and are each time astonished at the result. This is clear and distinct proof of the delusion into which *even moderate drinking* plunges us.

Yet numerous excellent people will cry out against this conclusion, and will swear that they never drink anything but wine diluted with water, water just colored with wine, a half glass of wine or beer daily, but that this beverage is necessary to their health, to their welfare, that the doctor has ordered it, etc.

As to this, even when the "never" is exact, I reply first that serious study of the results of the medical use of alcohol, therefore also of wine, tends more and more to limit such use, and especially to suppress it entirely as a daily habit, reserving it rather for certain exceptional

indications and for a short time.

In any case wine as a "strengthener" is a myth, or rather pure suggestion.

As to the "welfare" of the user, whatever it may be in the general sensations, it is subordinate to the toxic effect. Either the dose taken deceives and slightly paralyzes the brain, then

it intoxicates and for this reason even must be considered harmful, or else, being too feeble, it has no toxic action, in which case it produces no general sensation nor any effect on sociability.

And certainly, the unfortunate example that one gives to others in using so pernicious a narcotic poison, even when one is sufficiently fastidious himself not to surpass the homeopathic dose which does not harm him, that example, I say, is very bad in proportion to what it returns to him who takes it, that is to say, nothing at all.

ALCOHOLIC DEGENERATION

About three-fourths of the crimes and personal offenses are perpetrated under the influence of alcohol, most frequently under that of casual



"The waters brown whose faint moved waves
Are glory tipped with gold by dying day."

drunkenness, not too far advanced. (Baer, Lang, Marthaler, and others).

Ten per cent of the men above 20 years of age die in the fifteen largest cities of Switzerland, directly or indirectly as a result of alcoholism (Federal Statistics).

Almost a third of the male admissions to Swiss insane asylums which admit alcoholic patients is composed of the direct victims of alcohol.

In 30 years the insane have increased by 72 per cent in the canton of Berne. In Norway, where the consumption of alcohol has greatly decreased, the number is no longer increasing.

The English life insurance societies which insure abstainers in a separate class, for more than 50 years have found among the abstainers about 70 per cent of actual deaths out of the 100 per cent of estimated deaths. At the same time the section composed of moderate drinkers shows a death rate of 96 per cent of the estimated 100 percent.

Worst of all is the amount of hereditary deterioration caused by alcohol. I will remind you that three-fourths of the idiots of Bicêtre are of alcoholic parentage; it is the same with epileptics. As to the insane, Mlle. J. Keller has shown in her thesis the enormous importance of the alcoholic factor in ancestry, by comparing the ancestry of the insane with that of the mentally sound. But the importance of this factor springs principally from the fact that, aside from alcoholism, it is insanity itself which is by far the chief hereditary factor in affecting descendants.

But insanity is a cerebral malady which does not directly affect the germs. Hence it can only be the expression of a pre-existent defect in ancestors reflected in the descendants.

Alcoholism, on the contrary, is the generator of new defects in healthy germs, defects which once introduced repeat themselves in descendants under the form of insanity, idiocy, epilepsy, mental unbalancing and neurasthenia. Many of those thus affected are born of parents who are sober but who are tainted by ancestors who were not.

Demme has compared the descendants of ten families of drunkards with those of ten families of sober persons. Of 57 children of the former only nine were normally developed. Of 61 children in the second group, 50 were normal. Experiments upon animals give similar results.

At the Congress of Vienna, Dr. Bezzola showed by statistical charts of the Swiss federal census that the 9,000 Swiss idiots counted in one enumeration presented two maxima of conception, namely, the period of the vintages and that of the carnival, maxima corresponding to

the *minima* of conceptions in general. Now these are the times of alcoholic orgies in Switzerland. But the especially striking fact is that the maximum at the time of vintage is enormous in the wine-growing cantons, not elsewhere.

Has it not been pretended, for the sake of defending alcohol, that it tends, by killing them off, to eliminate the feeble and the sick, the "rabble?" This is true, perhaps, for its most extreme victims, but they are the exception, and even strongly alcoholized individuals reproduce themselves long before their death, as do also their tainted descendants.

The one case of the descendants of the drunkardess, Adda Juke, officially investigated by Professor Pelman of Bonn, makes this clear. She has had 834 descendants. 709 have been discovered and reported, of whom 106 were illegitimate, 142 beggars, 64 supported by public aid, 181 prostitutes, 76 condemned for crime.

In 75 years this remarkable progeny cost the state \$125,000,000. That is how alcohol eliminates the rabble!

Does not the history of humanity afford us enough examples of retrogressions, degeneration, brutishness in the train of enervating or weakening customs? Does not slavery always jeopardize the slave-owner? And if one looks at the matter closely, does he not always find idleness, folly, luxury, or narcotics at the root of all this decadence and of all these defects? Do we not see in our day whole races being destroyed by the cheap alcohol sold them by European traffickers? Much has been said of the "higher man" of Nietzsche. For my part I have not seen him; but one need only open his eyes and look about him to be horrified by the legion of "lower men."

It is certain that the "lower men" are more quickly produced than the "higher man," and that alcohol is one of their principal procreators, doubtless even the principal one. Whoever wishes resolutely to put his hand to the regeneration of society ought not to content himself with the economic side of the social question. He must seek to help our run-down and degenerate race to rise again.

It is not civilization itself which corrupts. It is the corrupting factors that we blindly allow to develop within it without combating them, or that we even favor in every way.

THE FALLACY OF MODERATE DRINKING EXPOSED

Alcohol can be eliminated from our diet. The Mohammedans, the Russian dissenters, the great prohibitionist movement in Canada, Scandinavia, Finland, the United States, and New Zealand prove it. Some of these countries already have notable majorities of abstainers, that is of

persons who no longer touch any fermented or distilled drink.

The fact that must be grasped first of all in the alcohol question is that the vague idea of the possibility of a general moderate use of alcoholic drinks is a dangerous Utopia. If history did not prove it, good sense ought to do so.

In reality, the means of producing cheap alcohol and thus making for almost nothing alcoholic drinks decorated with all the titles of wine, beer, etc., increase daily. We have seen the effect of alcohol upon the brain and the human body. Is it to be seriously imagined that under such conditions general moderation in the use of this narcotic can be obtained? To do so, one must be terribly ignorant of human nature and of the nature of alcohol. No! One method alone has succeeded where it has been energetically employed, and it alone can succeed,—total abstinence for all from the use of alcohol in the diet. And by alcohol we mean all the distilled and fermented drinks, all the punches and bonbons containing alcohol, in short, everything which contains this poison.

Every narcotic ought to be severely confined to the pharmacy, and should there be placed under the most vigilant control of the authorities. It is truly absurd to see the state enact laws with severe penalties and tyrannical police regulations for trifles, fire cannon at flies and cowardly bargain with the monsters which are ruining society.

When we speak of prohibition, people protest in the so-called name of liberty. In reality, it is in the name of license, of prejudice, of cowardice, and of the interests of liquor dealers. Their cynical hypocrisy recoils before nothing. They are not content with filling the papers with their jests, with deceitful tales and false statistics a hundred times refuted and continually served up again. They gag the press which does not dare to tell the truth or to support abstinence for fear of losing its subscribers. They even fit out so-called scientific experiments instituted under the auspices and at the expense of liquor-sellers in order to prove the excellent effect of wine or some other alcohol on such or such an animal. Mammon and Bacchus mutu-

ally support each other, and the nations end by putting themselves more or less in their pay.

Without doubt, the wine-growers, brewers, and distillers grow rich. Without doubt, the state depends for a large part of its revenues upon the excise or monopoly of alcohol, that is, upon the poisoning of the people. But what an unworthy play upon words to pretend that there is in this a source of national wealth! Money so earned is extorted from the poor as from the rich at the expense of health, morality, the family, and the future of the whole race. It is spent to no purpose by the taxpayer, because the work employed in alcoholic production is a cursed business which brings forth misery and ruin.

Suppress by magic all the drunkards of a country; in a few years they will be replaced by new ones. Indeed, a large proportion of the drunkards die every year without the total

number being diminished. On the other hand, transform at a stroke all the moderate drinkers of a country into abstainers, and in a few years there will be no more drunkards. Moderate drinking is the nursery of alcoholism.

NECESSITY OF ANTI-ALCOHOL INSTRUCTION

What we ask is that people study to its depths the

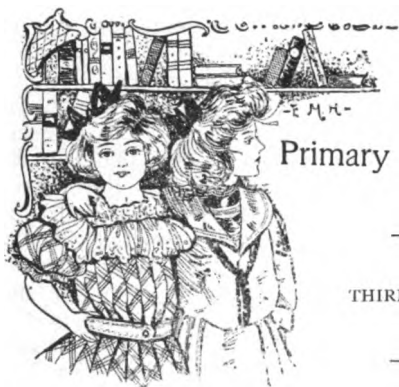
social question of alcohol, that they open their eyes to the social evil it does, that they begin to comprehend its absolute uselessness as a drink or food and its immense individual and social danger. Then they will proceed to its gradual elimination.

A nation which recognizes its duty in this respect will perceive that its treasury ought not to be based upon the poisoning of its people, because in weakening the latter in working ability, in health, and in resources it can come only to final bankruptcy. It will understand that it is its duty to oppose the use of alcohol by means of the schools and in all other possible ways: to encourage restaurants, public houses, cafes, etc., in which the sale of alcohol is forbidden; to introduce anti-alcohol instruction in the schools, and thus gradually to render wholesome the customs and health of the people.

Paris Review of Political Economy.



"Among the peaceful harvest days
An Indian summer comes at last."



Primary Lessons

THIRD YEAR

THE BODY FRAMEWORK

IDEAS of civic reform are spreading so rapidly that nearly every community now has its group of men and women who are working intelligently for the betterment of their surroundings. Under such guidance, the homes of the future are to be not only beautiful to the eye and healthful for the body, but uplifting in their social and moral influences.

The men and women of the future must themselves measure up to these improved conditions, and they can do so only as the children now in school are trained to understand and practice the laws of health.

Every lesson in physiology should be a step towards this result. The different organs of the body are the tools with which we work, and one must know how to use and take care of them before he can hope to increase or even preserve their efficiency. The youngest child of school age has already picked up many facts relating to this subject. Let us find what these are and build on the foundation already laid.

For the first lessons on bones, it will suffice to call attention to their place and use in the body, and to the more obvious ways in which children can aid the growth and development of a strong body framework.

(1)

ITS USE IN THE BODY

Go out with the children and look at some of the trees in the neighborhood. Call attention to their shape. Let the children find whether different kinds of trees are shaped alike.

How is the shape of an elm different from that of an oak? from that of a birch? Are these trees unlike in winter after the leaves are gone, as well as in summer? What makes them unlike?

Let the children make outline drawings of an elm and a maple. Give them the name, skeleton, for the bare trunk and branches of a

tree. Of what other use to a tree is its skeleton, besides giving it shape?

Name something else besides trees that needs a skeleton to hold it up and keep it in place. Why do people need a skeleton in their bodies? Where is your skeleton? Are all people of the same height and size? What is it that makes one boy taller than another?

Make an outline drawing of the skeleton of the body. Put your hand on a part of the body where you can feel the skeleton. What does it feel like? Why does it feel hard?

Call attention to the difference in size and shape of various parts of the body skeleton. Ask the class to find the part of the skeleton that is largest. Why does the trunk need a larger framework than the arms?

Where are the longest parts of the skeleton? Find a part of the skeleton that is nearly round?

Some parts of the body skeleton are bony boxes or cages, made to hold something. Find these parts. What are their names?

How does the skull look on the outside? Why is it covered with hair? What precious part of your body does it hold?

What kind of a covering does the chest have? What are the bony parts in front of it called? How many ribs are there? What parts of the body are shut up inside of the chest? How do the ribs and the spine help take care of the heart and lungs?

Find the parts of your skeleton that help you stand up and walk around; the parts that help you dress yourself in the morning.

Tell some of the things that you can do because you have this bony framework, that you could not do if all your body was soft like that of a jelly fish. What does the bony part of your legs help you to do? the bony part of your arms? of your hands?

What parts of the body framework can you bend or move in different directions? Find in how many directions you can move your head; your arms; hands; fingers; legs; feet; toes; your trunk.

Give the name, joints, to these parts of the body that can be bent and moved. Which joints can be bent in many directions? Why do we need joints, instead of having the body framework all in one piece?

THINGS TO REMEMBER

We can tell one kind of tree from another by its shape.

The trunk and branches tell what the shape of a tree will be.

They are the tree's skeleton.

People have a skeleton inside their bodies to hold them up and give them shape.

This skeleton is made of bone. It is hard and strong.

There are many bones in the skeleton, and they are of many shapes and sizes.

The bones are fastened together at the joints. The joints are the bending places of the body.

The bones of the skull protect the brain and keep it from getting hurt.

The bones of the chest protect the heart and the lungs.

The bones of the arms and legs are long and slim so that they can move readily.

(2)

AIDS TO ITS GROWTH

If any of the children have seen the framework of a house going up, let them tell what they can about the process.

Ask what part is built first. What are some of the materials that a carpenter uses in putting up the framework of a house? What tools does he need? When is such a house ready to live in?

The framework of the body has to be built up little by little, like the framework of a house, but it is not done at all in the same way.

To begin with, not one of us can get a carpenter to do this work; we each have to build the framework of our own bodies for ourselves.

We do not begin at the bottom and build the framework of our feet first, then that of the legs, and the trunk, and the arms, and finally that of the head, as the carpenter builds a house.

The framework of the body is all put together and started for us when we are babies. Our work is to make each part of it larger and stronger.

What kinds of materials must we use to make the body framework grow? Stone or brick or wood would be of no use here. We need something very different,—food.

Some of the best kinds of food to build our framework are bread and milk, eggs, fresh fruits, and vegetables.

Then we must have plenty of good pure water to drink, but no tea or coffee. We will leave that for grown-up people. And of course we will not even taste beer or any drink that has alcohol in it. Such drinks will not help us build a strong framework for our bodies. Instead, they would be likely to keep it small and weak.

Ask the children what they had for breakfast this morning that will help to make the framework grow. Help them name good foods to tell mother about when they go home to-night.

Tell a story to bring out other ways in which children can help to make the framework of their own bodies strong and vigorous. Call it

A MEXICAN BROWNIE

When Pablo was four years old, a new teacher came to the little village in New Mexico where he lived.

She was so bright and pretty that Pablo could not bear to have her out of his sight. He was too young to go to school, but nobody could keep him at home after Miss Lee came.

He was the first to come in the morning and the last to go away at night, and though he had no books and studied no lessons he learned a great many things.

"You must not carry water in your right hand all the time," he told his mother one day.

"Why not?" she asked.

"Miss Lee says it makes your bones grow crooked. And it does. Don't you see how much higher one

of your shoulders is than the other?"

"You learn queer things at the American school. What else does the teacher say?"

"Oh, lots of things. She says every one of our bones is a little builder, and our breakfasts and dinners and suppers are the tools they have to work with."

"What do they build?"

"Why, our bodies. They begin when we are tiny little specks of babies. That's what makes folks grow. But it takes other things, too."

"Miss Lee says our bone-builders don't like



"I'm going to be a big man, some day."

•Courtesy of the Home Missionary Magazine.

to work in stuffy rooms. So she has the windows open every day. When it is pleasant she has school out under the tree.

"Then we play, and Miss Lee plays with us, the very best games. Some are for our legs and some for our arms, and some for our fingers, and our heads, and our backs. That's to give all our builders a chance. If some of them do more than the rest they get bigger. That's why we have to carry things in both hands."

"Bless the child! And what else?"

"She says we mustn't smoke cigarettes, because they put our builders to sleep and stop them from working. And if they stop too long while we are little they never get caught up, so we have to stay small and short all our lives."

"Good! You are a big boy now, I want you to be a big man some day."

"I'm going to be," said Pablo.

SOMETHING TO REMEMBER

Our bones are alive. They are all little builders.

They take part of the food we eat and change it into bone like themselves.

This is what makes our bones grow larger and stronger when we are children.

Our bone-builders need good food and pure water or they can not make good bone.

Beer is a bad drink. It does not feed the bones nor help them in their work.

Our bone-builders need pure air to work in and sleep in.

They grow faster if we play and work every day.

We need to use every one of our bones, because each one grows by being used.

Our bone-builders need a long sleep every night to rest them.

We must not use one arm or one leg more than the other or we shall grow one-sided.

We must not smoke cigarettes. They put the bone-builders to sleep and hinder their work.

(3)

GAMES AND EXERCISES

Examine the dress of each child to make sure that it allows of the freest motion of every part of the body. See that there are no tight bands or garters and that the shoes and stockings fit as they should.

Take care that the child's clothing is also adapted to the weather and the temperature; that the feet and legs are properly protected, and that no parts of the body are either overheated or too thinly clad.

Illustrate the right way to sit, stand, and walk. Let the children take the same attitudes. Select those who are most graceful, and who natu-

rally stand and walk well, as models for the class. Encourage all to do so well that they can act in this capacity.

Give short exercises in deep breathing from four to eight times a day. The chest bones are so soft and pliable at this age that such exercises given often now will soon enlarge the chest capacity and give corresponding increase in health.

BREATHING EXERCISES

1. Attention.
2. Children rise.
3. Step into aisle at right of desk.
4. Hands at side.
5. Take in deep breath while you count three slowly.
6. Breathe out during equal length of time.
7. Repeat 5 and 6 three times.
8. Children seated.

See that both boys and girls run and jump every day, outdoors when possible, in the school-house in stormy weather. Show them how to jump, lighting on the toes and ball of the foot, bending the knees and leaning forward during the jump to avoid jarring the spine.

See that the children play outdoors in cold weather as well as in warm, taking care that they are suitably dressed and that they do not stay out long enough to get chilled. In very cold weather they should come indoors often enough to get warm, and then run out again.

Change the air in the schoolroom entirely at least once an hour, giving bodily exercise at the time to avoid danger to the child from draughts while sitting. Alternate physical and mental exercises so that the child has frequent change of position as well as of work.

GAMES

Make large use of motion plays of different kinds. All games of tag, Prisoner's Base, Oats, Peas, Beans, and others which bring in trades and occupations are of value in developing the body framework, and at the same time these hold the child's interest.

Select action poems from the children's reading books and from their memory work. Talk these over until all get the author's idea, then let the children act out the story. Many prose articles may be used in the same way to advantage.

EXERCISES FOR DIFFERENT PARTS OF THE BODY

Position. Arms at side, chest high, head erect, chin back, shoulders square.

Rising. Rise on toes. Lower heels to floor.

Leg. Swing each leg in turn, forward and back. Raise foot from floor. Stretch leg to front, diagonal, side, diagonal, back. Repeat, touching toe to floor with each motion.

Arm. Swing arm at side. Stretch at side, in front, over head. Clap hands. Bend fingers separately. Clasp hands and push them down, then up.

Trunk. Twist slowly to right, to left. Bend forward at hips, backward slowly, to each side.

Neck. Turn slowly to right, to left.

Head. Bend forward, backward, to each side.

Poor food, bad hygienic conditions, the privations of youth, and, above all, the use of alcohol make small men.

It is well known that in order to obtain small animals the dog merchants add alcohol to the food of their creatures, what is true of animals being also true of man.

Extreme diminution in height is noticed in those regions most addicted to the use of alcohol, where we see in fact whole villages incapable of furnishing a single conscript.

One thing a person must remember, and that is to avoid alcohol. That the occasional drink prevents the growth of the big man is a fact which can not be too frequently repeated.

French medical authorities point out that the gradual diminution of the size and height of the French conscripts is owing to the use of alcoholic drinks. The army standard has had to be reduced twice on this account. The physical deterioration of the German army, as compared with what it was thirty years ago, has excited the alarm of the Emperor. All authorities attribute it to alcohol.—A. PERES in *Paris Cosmos*.

TOBACCO LOWERS MENTAL POWER

The use of tobacco in any form by young boys has an undoubted tendency to lower very materially the mental force and acumen, and to render the user a person without ambition. It may even cause insanity or idiocy.—N. B. DELAMATER, M. D., Specialist in Mental and Nervous Diseases.

TOBACCO INJURES DEVELOPMENT

It [tobacco] is positively harmful to the development of the physical and mental powers of our growing youth. Statistics show most markedly the contrast in physical and mental standard between the boy who uses tobacco and the one who does not.—L. D. MASON, M. D. Brooklyn, New York.

The lesson one day was a story about flies, their curious ways and habits. Among other things the story said that flies always kept their faces clean, and then went on to tell how they rubbed their feet over their heads, as could often be seen by watching them.

The last thing in the lesson was the question: "What lessons can boys and girls learn from the flies?" Only one small boy ventured an answer, and that was, "To wash our faces with our feet."—*Christian Register*.

Alice, aged three, came in to dinner, her hands sticky with pitch.

"Where have you been to get all this pitch, Alice?" asked mother.

"Been out to the barn," responded Alice; "Muth be I got it off the pitchfork."—*Little Chronicle*.

WINTER LULLABY

BY JULIA H. MAY

The valley has gone to sleep,
The birds in their nests are still,
And the maple branches bend and weep
Over the leafless hill.

Till the pitying sky looks down
And whispers to the snow:
"Let us cover the hills so bare and brown
Where the flowers used to grow."

And she croons a lullaby
Through the hush of the storm:
"Sleep, sleep, in your cradle deep.
I will keep you warm;
Oh, sleep, sleep, sleep."



A good way to get exercise.

School Physiology Journal

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NOVEMBER

Strange month of moods! When even Nature feels
How sad a thing it is the turning gray!
Yet over her the joy of April steals,
When some late bird sings from a leafless spray.

With spring-like skies come back spring memories:
She half forgets how near her winter is.

—CHARLOTTE FISKE BATES.

THE POWER OF LOVE

“**L**OVE Me, Love My Dog.” What is the secret of this spirit of kinship that leads the boy to demand for his dog an equal share of the love he prizes? Watch the dog when the boy comes home from school. Every inch of his body quivers with a delight that runs through his canine spine and wags its termination with an enthusiasm that threatens to dislocate that stubby tail. He climbs upon the boy barking his joy which if it only could be expressed in articulate speech would say, “I love you, Tom, I love you. I am overjoyed to see you.”

Nothing human can exceed the zest with which the dog bounds with the boy over the fields, sharing his sports. True, it is only dog love, but it is intense, sincere and individual. Tom knows that he can trust it, that it is not of the vagrant variety that will forget him for any new sweetheart that may chance that way; that besides being true in sentiment it is true also in action, and that every particle of his dog's being is pledged to him for better or for worse until death does them part.

It is this certainty of the dog's affection and its expression that binds the boy to the dog, and at the same time reveals the approach to the heart of the boy. Love is the open door to the heart of boy or girl. If the teacher really loves the boys and girls in the school or class the pupils know it, for that love will find expression in the teacher's looks, words, and deeds, even in dealing with delinquents. For such a teacher the discipline that is necessary to the progress

of the school is comparatively easy. The roughest boy who resents an injury done to his dog that loves him will be on the defensive for the teacher of whose love he feels equally sure. Such a boy will be the more ready to apply himself to the tasks the teacher assigns until he becomes interested in the subjects he is studying and thus a foundation is laid that may eventuate in the scholar who loves knowledge for knowledge's own sake.

Truly, love, not weak, mushy sentimentality, but the wise, broadminded love that rejoices in and seeks the utmost good of others is “the greatest thing in the world.”

AN INTERNATIONAL CONTEST

THE battle against alcohol is an international contest in which all nations must engage, for all have felt the ravages of this foe. The United States had a nineteenth century pledge signing crusade which was so successful that, in 1861, a majority of the people were abstainers. The old drinking habits of the fathers were abolished. But the Civil War came with all its horrors, in which many a pledged young soldier acted on the belief that it was physically and morally right to take alcoholic liquors to help him endure the stress and strain of battle. When the war was over human chattel slavery was gone, but the slavery of alcohol had gained a new lease of life, and the temperance battle had to be begun all over again. It was the old story, “My people are destroyed for lack of knowledge.”

But a marvelous thing happened. Modern science entered the field, proving that alcohol in all forms deceives instead of adding strength or power of endurance, and thus is an outlaw which should be outlawed from human habits and traffic.

More marvelous still, the legislators of the national Congress and of every state in the union enacted laws requiring this story of what science has revealed against alcohol to be taught, with other laws of health, to the children in the public schools of the land. This compulsory education which began in one section of our country twenty-two years ago has been practically universal for more than a dozen years throughout this republic.

As a result, public sentiment against drink is being developed with startling rapidity wherever, as the law requires, every public school child is learning, in each of the primary and grammar grades and in the first year of the high school, the progressively developed story of the evil character and effects of alcoholic drinks and other narcotics, in connection with the laws of health, and when every such child

who is able to read has been given the help of a text-book adapted to his use.

In Ohio, last June, as the new local option law was going into force, the gentleman in charge of the campaign remarked, "Our surprise is unbounded. District after district in Cleveland is going dry. It is the temperance instruction in the schools that has done it."

A letter just received from Mrs. Clark, the President of the Ohio State Woman's Christian Union, says:

"Under our new local option law more than half our villages and three-fourths of our townships are free from saloons. Four cities and five counties are entirely dry, and several counties dry except for one little place in each. Scientific temperance instruction has been a great factor in this progress."

Good news comes from New York and Illinois which have splendid scientific temperance laws that do not permit taking the study from any of the lower grades, or text-books from pupils above the primary.

Dr. Harris, United States Commissioner of Education, returning from a trip through the southern states, said to me, "Temperance education has told in the south. It has made the sentiment that under local option laws is sweeping their states for prohibition."

Our national Bureau of Education tells us that the average public school attendance is not quite five years of two hundred days each. To provide for this study only in upper grades is to provide for the perpetuity of existing conditions, namely, a minority educated against the use of alcohol who vainly try to vote down the majority who have not been so educated. The brewers favor this plan. They movingly appeal "against this study for children of tender years." Such a plan would keep back the cause of temperance indefinitely. From it, "God save the state!"

The truth against alcohol is out and the nations of the earth are demanding that it shall be taught their children, turning to us in the United States for help. Many appeals have come within a few days. First an official delegation

from Sweden which has had a good temperance education law for twelve years but no scientific temperance school text-book. When this lack is supplied and the study put on the same footing as other regular branches, it will be a success.

Last week the secretary of a committee representing the 15,000 registered physicians in England, Scotland, Ireland, and Wales who recently signed a petition for such scientific temperance instruction in their public schools as we have in America wrote that this great army of physicians wished to accompany their petition to all boards of education with a letter telling how much study is given to this subject in American schools and in what grades or standards it is pursued. They have been told in reply that if they wished for results they

must insist upon systematic study in all grades below the ninth and also in the first year of the high school, with text-books adapted to grade in the hands of pupils able to read.

Before that reply was finished there came throbbing over the wires a request for an audience from a gentleman sent by the German government to study and report on the manner and methods by which the science of health and temperance is taught in the American public schools.

Meanwhile people from all countries are

coming to us needing to be educated to total abstinence, and in this work all temperance organizations should unite. A twentieth century pledge-signing crusade has been inaugurated and two English workers, Mr. and Mrs. Tennyson Smith, are now in this country joining hands with us in the worldwide struggle. Such a crusade follows naturally upon the development of public sentiment by education. It is the logical outcome. But we can never relax our educational efforts, for each year brings into the schools a new army of the uninstructed to be taught the same scientific facts concerning the nature and effects of alcohol, and to be saved to sobriety and healthful living.

MARY H. HUNT.



"Love me, love my dog."



Grammar Lessons

SEVENTH OR
EIGHTH YEAR

THE NERVOUS SYSTEM

AS Dr. Forel has ably shown in another column, civilization contains within itself the elements that make for human improvement and those that tend toward its degeneracy. This makes it the duty of the leaders of mankind to foster the one by every means within their power and as resolutely to combat the other.

What is true of the race is true in a measure also of the individual. Every teacher sees in her pupils the same conflicting tendencies toward right and wrong, progress and retrogression, and must strive to promote the nobler tendencies and repress the baser.

This, indeed, is the great problem of education,—teaching the child to control himself, his thoughts and acts, as perfectly as his brain and nerve centers control the organs and processes of his body.

Study of the nervous system should serve as an illustration and incentive to this nobler work of self-control. As the pupil learns of the wonderful way in which messages are continually being sent back and forth through his body without his knowledge,—keeping his heart beating and his lungs breathing as steadily when he is asleep as when he is awake,—he should learn also of that other work of his nervous system which is entirely under his own direction and for which he is always responsible.

He finds that he can not decide when his stomach shall begin to digest the food that is put into it, but that he can and must decide what food he will take into his stomach, hence he must know what foods are wholesome and what are injurious, and must train himself to eat the one and refuse to touch the other. So he must decide whether he will learn his lessons and speak the truth and obey his parents and teachers, or whether he will be idle and untruthful and disobedient. Above all, he needs to know that the way in which he decides

these questions and hundreds like them, now while he is a boy, and keeps on deciding them will determine the kind of habits he will have when he is a man, and thus the kind of man and citizen that he will be.

Instead of studying first the structure of the nervous system, let the first lessons for this grade be on

ITS METHODS OF WORK

Before giving the class anything to prepare by themselves, explain to them the different ways in which the nervous system does its work,—by obeying the orders that each person gives to it through the brain, and by acting of itself without the knowledge of the person.

Ask some one to raise his arm above his head, and to tell how he is able to do it.

He may say it is done by the arm muscles, but that is not the whole story. What causes one set of these muscles to contract and another set to expand in such a way as to lift the weight of the arm?

There must be some part of the body from which an order can go to these muscles, and there must be other parts which can carry the message. The parts of the body that do these two kinds of work make up the nervous system.

Have a large chart or drawing of the nervous system ready to show at this point. From it let some one in the class find the brain, the central office of this system, and the nerves which carry the messages from this central office to every part of the body. Call on some else to trace the connection between the brain and the muscles of the arm.

How did word get to the brain that the arm was to be raised? Let the class answer this question if possible. Otherwise tell them that when the boy was told to raise his arm the sound was carried through the air to the nerves of his ears. These nerves (sensory) carried the message to the brain, and this, in turn, sent word by another set of nerves (motor) to the biceps muscles of the arm telling them to contract and raise it.

Let the class trace the course of both sets of these messages, that from the ears to the brain, and that from the brain to the arm. Suggest other things to be done by different ones in the class, asking them in each case to explain the process and trace the course of the messages sent, until all have a good idea of this kind of work done by the nervous system.

But it is impossible for all the orders that need to be given to the different parts of the body to be sent out from this one central office, the brain, or for the owner of the office, the person himself, to give all the necessary orders. If the work had to be done in this way it would

take all one's time to give the orders that would be needed to take him where he wanted to go, and those that are necessary to keep him alive. He would not dare to go to sleep, for fear his heart would stop beating or his lungs stop breathing.

To prevent this difficulty there are a number of smaller offices, or sub-stations, all along the backbone which receive and answer many of the messages from the organs of the chest and the abdomen. Find from the chart these smaller nerve centers and the nerves which lead from each to the heart, lungs, stomach, etc.

Find also how these organs are connected directly with one another through nerve centers. By this means, whenever one organ acts all those connected with it act also. When food is taken into the stomach, for instance, all the digestive glands know about it through the connecting nerves and at once begin to secrete the proper juices to digest it. So with other organs of the body which must work together.

The nerves and nerve centers which send and receive all messages of this kind are called the sympathetic system, because they enable the organs they connect to work in sympathy with one another.

You all know how hard it is to do an entirely new thing easily and gracefully, such as skating or typewriting, for instance.

At first, every such order has to go from the brain, because one has to think about it, and with all his thinking he will probably make mistakes and send a good many wrong messages.

But after much practice, one can typewrite without looking at the keyboard at all, or he can skate and think about something else at the same time.

The reason is that nerves which carry messages from the skin on the hands and feet and other parts of the body to the brain are connected at the spinal cord with the nerves which take the answers back to these parts.

In this way, when the fingers touch the keyboard, or the feet touch the ice, the nerves of sense do not have to carry the messages all the way to the brain unless one wishes them to do so. They can get an answer back much more quickly by connecting at the spinal cord with the nerves of motion which tell the muscles of the hands or feet how or when to move.

Then, too, one movement suggests the others which usually follow it. Thus, after one has written a word or a group of words many times, or has had a good deal of practice in skating, he has only to strike the first letter of such words on the typewriter, or touch his feet to the ice, to find himself writing or skating without the least conscious effort.

In all such cases the message of motion

comes from the spinal cord instead of from the brain. This is reflex action of the nervous system.

Let the class look up the meaning of the word, reflex, to find why this action of the nervous system is so called. They should then give illustrations of their own of reflex action to make sure that it is perfectly understood, tracing the course of all such messages through the spinal cord and back again to the part of the body that is to be moved.

Following this general class talk on the work of the nervous system, should come individual text-book study by the pupils of these topics, until they clearly understand the distinction between voluntary and reflex action, and the use of the sympathetic system; and can point out from the chart the nerves and nerve centers which act in any given case, at the same time telling what messages would be sent, and tracing the course of each.

ITS STRUCTURE

Knowing something of the work of the nervous system, the next step is to study the mechanism by which this work is done.

Certain facts have already been brought out,—that there must be a central office which can communicate with all parts of the body, together with a number of smaller offices to assist in this work; and that there must be connecting fibers to carry messages to and from this main office and its branches to all parts of the body, and from one part to another.

Before beginning to study the nervous system, the class should know that, like every other part of the body, it is made up of cells. They are now to learn that each of these cells has at least one branch or fiber joining it to other cells, and that it may have many such branches over which messages are constantly being sent and received.

Refer the class again to the chart of the nervous system. Why is it that some of the nerves shown are larger than others? Show a piece of electric cable or a bit of rope and call attention to the many smaller wires and strands of which each is made. Explain that the large nerves of the body are made up in the same way of many small nerve fibers. Have the class find where these main nerve trunks branch off in different directions, and let them trace the course of these branches to the different organs of the body.

Show an enlarged drawing of a nerve cell with its branches. Let the class find from their books what it is composed of and the special function of each of its different parts,—the protoplasm, nuclei, nucleoli, pigment, dendrites, neurites; also the meaning and use of nerve

tissue, and the reason why nerve trunks and nerve tracks are white in color while nerve cells are grayish.

In some classes, a sheep's brain may be used to good advantage in studying the structure of this organ. In other cases it will be better to defer such examination until the high school or college is reached, and to depend upon drawings and pictures for such knowledge of the structure of the brain as is necessary in grammar grades.

Whichever method is used, the class should learn the reason for the many irregular folds in the surface of the brain, and be led to think why these folds are deeper and more numerous in the case of thinking people and brain workers than in savages, and why the brain of an animal has even fewer of these folds and creases than that of ignorant or savage people.

Have a drawing of the brain put on the board, and after individual study of the subject test the pupils' knowledge by requiring them to locate from this drawing the brain centers which direct the different functions of the body. In a similar way test their knowledge of the differences in function between the cerebrum, cerebellum, medulla oblongata, and the spinal cord, until satisfied that each pupil has a coherent idea of the structure and work of each of these main parts of the nervous system.

BRAIN AND NERVE CONTROL

All that has gone before in the study of the brain and nerves should be preparatory to the fullest possible study of this topic. It is of no advantage to have a splendid system of communication between the different parts of the body unless this system is kept in good working order all the time, and grows in efficiency as the person grows.

This makes it necessary for every young person to know what he must do in order to have a strong, vigorous nervous system. Healthy brain and nerves require a healthy body to begin with, and both can come only through right living.

Have a general class discussion as to what right living is,—what it means as to food and drink, clothing, pure air in living and sleeping rooms, exercise and rest, and other rules of hygiene. Then refer the pupils to their textbooks for individual study of these topics.

Besides health, there must be training of the nervous system, because on its efficiency depends the good work of every organ in the body. The sensory nerves get their training through each of the five senses which tell us what is going on in the world. When we pay attention to what we should see or hear or learn through any of these sense organs, and

take care that each of them sends a true report to the brain, we are giving them the right kind of training; when we are careless or inattentive, we are giving them bad training which they may never get over.

So with the motor nerves which carry messages from the nerve centers to the muscles of the body. They are trained to work well and quickly by sending the same messages over and over, and thus getting the same results. If we do a thing one way today and another tomorrow and a third way the next day we can do it very little better at the end of a week or month than at first. But after doing the same thing in the same way for a time it constantly grows easier, and can also be done much quicker than at first.

In this way the nervous system is all the time being trained to be either a help or a hindrance. Call for illustrations from the class of ways in which both may be true.

In this connection bring out the special danger in beginning to drink or smoke,—that of forming habits which one may never be able to break, or at least not until the nervous system and through this every part of the body has been more or less injured, perhaps so severely that recovery is impossible.

Huxley has well said that the most valuable result of education is the ability to make yourself do the thing you ought to do, when it ought to be done, whether you like to do it or not. This is the positive side, but there is a negative side as well, that of keeping yourself from doing the things you ought not to do, when they ought not to be done, whether you like to do it or not.

Show the class Rose Bonheur's world-famous picture of horses reproduced on page 47. Each is represented not only as possessed of all the good qualities of a noble animal, but as being free from blemishes. If this is admirable in horses, it is an ideal even more to be desired and striven for by men and woman and by boys and girls who are to be the coming men and women.

AUTHORITATIVE QUOTATIONS

TOBACCO ENSLAVES THE BODY

The whole physical organism is enslaved by it [tobacco]. It is making terrible inroads among the boys of today, drafting, depleting, stupefying the brain, enervating the nervo-muscular system, and impairing the intellect. More than a score of diseases are traceable to the use of the weed. The young are vastly more susceptible to the narcotic poisoning than those of adult years.—D. H. MANN, M. D.

TOBACCO LESSENS SELF CONTROL

The earliest effect of the tobacco habit is

upon the heart, through its nervous mechanism ; then upon the general nervous system, including the brain (the latter showing itself in insomnia, loss of memory, and later in want of proper mental control). Finally, the nutriment of the entire system suffers.—CHARLES GATCHELL, M. D., Chicago.

TOBACCO HEADACHE

The use of tobacco in any form is injurious to the nervous system. In addition to the tobacco heart so well known, there is a tobacco headache, attacking the patient once or twice a week. Most of the victims are not aware of the cause. All forms of tobacco are prepared, or "doctored," to make them attractive to customers, but I incline to think that the bad effects are mainly due to the tobacco and not to the adulterants.—EDMUND ANDREWS, A. M., M. D., LL. D., Professor of Surgery, Northwestern University.

says, "not one pupil who used tobacco has stood in the first rank in the Northwestern University in nine years. As the scholarship is lowered, the ratio of tobacco-users increases."—N. A. RICHARDS, Supt. of Schools, Saginaw, Mich.

The Educational Society has secured figures which show that of the 215 boys in grades four to eight inclusive, in the Bloomingdale, Ill. schools, 68, or 31 per cent, have smoked cigarettes from one month to three years, and that not a single boy who smokes has made an excellent record in his class work. Of those who smoke, the figures show that 46 per cent fail of promotion, and that 14 have spent two or more years in the grades in which they are now.

MODERATE USE OF NARCOTICS DIMINISHES WORKING ABILITY

The habitual, even moderate use, of a narcotic can never increase physical or mental work-



"Not to be conquered, but to stand free,
This is to live, and win the final praise."

TOBACCO WEAKENS THE WILL

More young men break down in body and mind and go astray as a result of smoking than of drinking. Tobacco soothes the excited nerves to render them ultimately more irritable. It produces debility in self-restraint, and weakens the power of the will. It diminishes mental capacity, corrupts the moral sense, and stimulates the animal nature.—MATTHEW WOODS, M. D., Amer. Med. Ass'n.

SMOKING MEANS POOR SCHOLARSHIP

Of twenty smokers in one schools, all but one are slow thinkers, and none of them think quickly. Eight are reported as very slow mentally, and three absolutely dull.—P. L. LORD, in the *Moderator*.

Tobacco in any form dulls the mind of the pupil. "With a single exception," Dr. Fisk

ing ability, but instead, diminishes both, more or less, qualitatively and quantitatively.—AUGUST FOREL, M. D.

Whoever would give himself wholly to his business can not allow his physical, mental or moral health to be dissipated by the use of stupefying substances, whether chloroform, ether or alcohol.—MATTHAEI, in *Die Erhöhung der Kriegstüchtigkeit*.

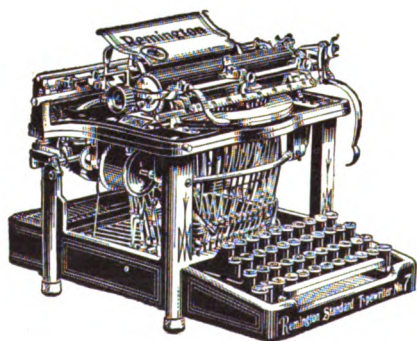
EFFECT OF ALCOHOL ON MENTAL FUNCTIONS

Worst of all is the disturbance and diminution of mental functions which is recognizable and measureable even after one glass of beer or wine, or a glass of brandy.—MATTHAEI in *Die Erhöhung der Kriegstüchtigkeit*.

About half of all mental diseases are due either directly or indirectly to alcohol.—MATTHAEI in *Die Erhöhung der Kriegstüchtigkeit*.

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PRIMARY—The Body as a Whole; What we can do with it. Exercise and Rest. Growth and Repair. Cigarettes. How the Body is held upright; Uses and Care of the Bones.

INTERMEDIATE—The Body as made up of Parts: Uses and care. The Body's Need of Cleanliness: Uses and Care of the Skin.

ADVANCED—The Digestive System of the Body. The Brain and Nerves. Nutrition of the Body. Sensation.

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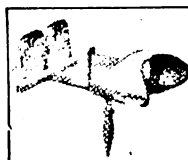
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School Physiology Journal

Vol. XIV

BOSTON, DECEMBER, 1904

No. 4

INSPIRATION

“THE mightiest souls of time hover o’er us,
Who labored like gods among men,
and have gone
Like great bursts of sun on the dark way before
us ;
They’re with us, still with us, while we battle
on ;
Looking down, victor-browed, from the glory-
crowned hill,
They beckon and beckon us on, onward still !”

NOBLE DEEDS

BY S. K. BOLTON

He built a house,
time laid it in the
dust ;
He wrote a book, its
title now forgot ;
He ruled a city, but
his name is not
On any tablet grav-
en, or where rust
Can gather from dis-
use, or marble
bust ;
He took a child from
out a wretched
cot,
Who on the state
dishonor might
have brought,
And reared him to
the Christian’s
hope and trust.

The boy, to man-
hood grown, be-
came a light

To many souls,
and preached

The won’drous love of the Omnipotent.

The work has multiplied like stars at night
When darkness deepens ; every noble deed
Lasts longer than a granite monument.

BODY HELPS SOUL

BY EDWIN ARNOLD

Not mean, nor base,
But of Heaven’s best upbuilding is this House

Fashioned for man : The City of nine gates,—
Wonderful, subtle, sacred ;—to be kept
Fair and well garnished ;

Graced with ornament
Outside and in, and wardened worthily,
That, in its ordered precincts, angel’s wings
May float and fold, and Body help the Soul,
As Soul helps Body.

THE REFORMER

BY E. R. SILL

Before the mon-
strous wrong he
sets him down—
One man against a
stone-walled city
of sin.

For centuries those
walls have been
a-building ;
Smooth porphyry,
they slope and
coldly glass
The flying storm
and wheeling sun.

No chink,
No crevice lets the
thinnest arrow in.
He fights alone, and
from the cloudy
ramparts
A thousand evil faces
gibe and jeer him.

Let him lie down,
and die ; what is
the right,

And where is justice, in a world like this?

But by and by, earth shakes herself, impatient ;
And down, in one great roar of ruin, crash
Watch-tower and citadel and battlements.

When the red dust has cleared, the lonely
soldier
Stands with strange thoughts beneath the
friendly stars.



MARY HANCHETT HUNT

Director Bureau of Scientific Temperance Investigation and Super-
intendent Department of Scientific Temperance Instruction of the
World and National Woman's Christian Temperance Union.

ON HILLTOPS

ONLY the hilltops catch the golden splendor

Of slowly sinking suns—

While valleys lie within the deepening shadows,

Where earlier twilight comes.

So shines a light where souls thro' earnest striving
Have gained life's higher ways ;
These human peaks of lofty thought and purpose
Catch bright, celestial rays.

Rise to the hilltops of thy moral being,
Bask in that sunshine's glow,
And radiant beams that reach not lower levels
Will light thy path below.

Selected.

TWENTY-FIVE YEARS OF PROGRESS

BY MARY H. HUNT

THE cause of temperance, formerly based on evanescent sentiment and fluctuating opinion, rests today on the firm foundation of demonstrated science. More than that, the truths of this science, which prove beyond cavil that total abstinence from alcohol and other narcotics is a law of nature that can be disobeyed only at a risk, are being taught the coming millions in this country who are in our public schools.

THE BEGINNING OF SCIENTIFIC TEMPERANCE

The story of my relation to these facts is as follows :

In 1879, I first carried to the National Woman's Christian Temperance Union in convention assembled at Indianapolis, Indiana, the conviction that for a long time had been haunting me, namely, that prevention through universal scientific temperance education in the public schools would solve the alcohol problem. A resolution adopting the idea as a line of work was passed by that convention. A standing committee, of which your national superintendent was chairman, was chosen to translate that resolution into action. The following year, in 1880, this committee at the request of its chairman was merged into a department with a superintendent at its head whose duty it should be to originate and direct plans of work to be executed, in the endeavor to establish this form of education.

ENACTMENT OF LAWS

Twenty-five years have rolled by since that conviction took shape as an organized feature of the Woman's Christian Temperance Union

under the direction of its present superintendent. During these twenty-five years this educational idea has been embodied in the laws of the entire country. These laws are more or less stringent in their requirement that the nature and effects of alcoholic drinks and other narcotics shall be taught, and shall be studied as a part of physiology and hygiene by the pupils in all schools under public control. There are 22,000,000 children of school age in this country. These millions are the coming men and women of the nation, its future law-making power.

It has taken twenty years of planning and exacting toil to secure the passage of these temperance education laws by Congress and by one after another of the forty-five states of the nation.

When our Lord commanded his followers, "Go ye into all the world" and bear the message of my truth, he did not promise that the way of that going should be a thornless path ; but He did say, "Lo, I am with you always, even unto the end." And He has been. He has never let the scientific temperance worker or leader forget the conviction, as a motive power for action, that the republic will perish unless alcohol is abolished from human habits and traffic, and that it can never be abolished except through teaching the whole people the truth about its evil nature and effects.

The history of the enactment of these temperance education laws is the history of the invincible march of the purposes of mercy for our own and for other nations of Him who said, "I am the Truth. The Truth shall make you free."

Before these purposes, as we review their character in this climacteric hour, we bow with reverent gratitude that He has let us have some part as standard-bearers, while to Him be all the glory, whose truth we have tried to uphold.

The undertaking, begun twenty-five years ago, was the education of a nation in the physiological reasons for obeying the laws of health, including those that teach abstinence from alcoholic drinks and other narcotics because of their evil nature and effects.

The enactment of the laws requiring the study was the smallest part of the seemingly impossible work of getting an unwritten science, for that is what scientific temperance instruction then was, incorporated into the public school system of a nation of 50,000,000 people.

We were at that time in the condition that Great Britain, Sweden, Germany, France and other European countries now are, namely, that of desiring the truths about these topics taught, when neither teacher nor pupil was furnished with a statement of what the truths are that should be taught.

PREPARATION OF BOOKS

Our task, however, was a harder one than that of our friends in Europe now is for whom the American school text-books on temperance physiology have blazed the way. Twenty-five years ago no one had gathered the truths on this subject from their many sources and arranged them in manuals of instruction furnishing a progressive study through the grades of the public schools.

The sources from which these truths are derived are: anatomy, which treats of the structure of the body; physiology, which treats of its functions; general hygiene, of the laws of

graded school text-books containing the whole truth and nothing but the truth on these subjects have been prepared and are being studied in the public schools of America. The publication of these books with their definite statements of proved truth against the use of all forms of alcoholic drinks, even in so-called moderate amounts, brought the cause at once before the firing line. Shots of opposition came from men who like the drink, from those in the trade, and from others who pose as "temperance people and total abstainers," but who say they are opposed to teaching temperance physiology to little children of tender years, and especially opposed to text-books in the hands of pupils



health; fermentation, which shows why the healthful juice of fruits and grains becomes a poison in wines and beers; chemistry which teaches the component parts of substance; toxicology, the science of poisons; pathology, the story of the physical, mental and moral effects of alcoholic and other narcotic poisons and of the consequences of disobeying other laws of health; and also psychology and child study which show what progressive truths the child can understand and needs to be taught during the succeeding years to shape his habits which are rapidly forming.

To expect the average teacher of any grade

who can read, in the lower grades.

But through all God has stood by his cause. He has provided in advance the disproof of the charges against the great fundamental truths concerning alcohol which the schools of this nation are teaching its children, a teaching which is making America the most sober of the great nations.

RESEARCH WORK

But God never does our part. If, for twenty-five years, I had not kept up the research work that the convention last year recognized as the Bureau of Scientific Temperance Investigation,



to glean from all these separate sciences the truths needed by his class, or to expect the primary or lower grammar grade teacher to adapt lessons for her small pupils from an advanced text-book without changing the meaning of the truths there stated in technical terms is in both cases to expect the impossible. Thus, it was self-evident from the first that, without series of text-books in temperance physiology well graded to the capacities of all classes of pupils, from the first primary to the first year of the high school inclusive, the scheme of scientific temperance instruction as a preventive of intemperance would be a failure.

But that scheme has not failed, because

we should not have known that exact laboratory experimentation had furnished the very evidence needed to refute Professor Atwater's theory that alcohol is a food; nor could we have proved false the charges made by the Committee of Fifty and by others.

As the Trojans were bidden to beware of the Greeks bearing gifts, I bid you beware of the siren-voiced advocates of committees made up of so-called friends and of opponents to scientific temperance instruction "to see if an agreement can be reached satisfactory to all."

The desired agreement satisfactory to these would-be committee makers has thus far proved to be the recommendation that this subject, as

a systematic study with books for the use of pupils who have books in other subjects, shall be taken from the lower grades of our public schools. This would take the study that is making non-alcoholic sentiment from a majority of the coming voters of this country, for the National Bureau of Education reports the average limit of school attendance in the United States to be a little less than five years of two hundred school days each. It is self-evident that the majority of the coming citizens of this country, its future law-making power, are in the first five grades or years of our public schools. Hence any attempt to take the study of temperance physiology from any of the lower grades (years), or text books on this subject from pupils who have books in other subjects should be opposed to the utmost.

FALSE CHARGES REPELLED

The charge of the Committee of Fifty, in their report published in 1902, that the compulsory study of temperance physiology in America is "an excrescence, an incubus engrafted upon our public school system," was a serious reflection upon the legislators of this entire country. Every member of the national Congress who had voted for these temperance education laws either for his state or nation, and most of them had, was therefore interested to find in the *Reply to the Committee of Fifty* that every accusation was groundless which this Committee had made against the study his vote had helped put into the schools.

The unanimous vote of the Senate of the United States, on motion of Senator Gallinger, M. D., to make this *Reply Senate Document 171* was an act of far-reaching national significance. This government indorsement dispelled the fears of honest doubters, and encouraged the hearts of all who long to see the last traces of alcoholism abolished from our land. The more than 100,000 copies of this *Reply*, distributed through the mails and by our Woman's Christian Temperance Unions, were so many evidences that there is no defense for the most moderate drinking nor excuse for opposition to teaching total abstinence to the children of this nation.

TEMPERANCE INSTRUCTION AND BUSINESS

Twenty-five years ago there was not in all the world a law requiring the public school study of scientific temperance. The people believed that alcohol, moderately taken, was not only harmless but useful, adding to strength and skill in labor. The teaching of the school to the contrary, that alcohol is a poison which impairs skill and injures working ability, appeals to the hard-headed business sense of the country, which consequently demands total abstinence

today as a condition of employment for all grades of employees.

The effect of this upon our country is well stated by Professor Justus Gaule of Zurich, Switzerland, in a recent published article entitled *Muscles or Nerves*, in which he says:

"In America, step by step the machine has taken the place of muscles, until only the American's nervous system is needed to control and make the machine serve him more completely. It is characteristic of the American workman that he has become a nerve-man. The time has now come when the two types of men, the muscle-man and the nerve-man, must measure forces with each other.

"But how has the American workman become a nerve-man? The alcohol-free air of America as compared with that of the countries of Europe is an explanation. America pays her workmen more because, as nerve-men, they give back more. In a rivalry between the old and new world on the basis of present ability to produce, the old world would have to go under.

"How shall this danger be averted? First of all by combating that which makes the nervous system incapable of further development, alcoholism. The alcohol-free atmosphere of America is a result of the instruction in the public schools concerning the influence of alcohol. The Americans by this instruction concerning alcohol have done their country a greater service than they think. Such instruction can not be imparted without a foundation in physiology, giving the idea that human life is based on definite laws. The transition from muscle-man to nerve-man begins with this instruction in earliest years. In order to accomplish this transition, we in Europe must broaden the instruction in our common schools by intelligent study concerning the powers of the human organism and the dangers which threaten it from alcohol."

No nobler comment than this from so distinguished a scholar on the results of the twenty-five years' work of this department could be asked.

CONSUMPTION OF ALCOHOL DECREASING

In spite of the fact that during the last twenty-five years there have come to this country 11,719,823 people bringing old world drinking habits with them, the per capita gain in the consumption of alcohol in the United States has fallen during the last twelve years from seven and a fraction gallons to two and a fraction.

From the temperance physiology lessons which the children of the foreign-born get in our public schools, they are learning and telling their parents that alcohol is their worst enemy.

To my question, what proportion of the people in the dining car order liquors, the conductors on an average reply, "Out of fifty people served meals in the diner not more than seven order alcoholic drinks," not quite one seventh of the whole, and that number is not increasing, except in the case of evening trains that take business men home.

The false notion promulgated by the Committee of Fifty, that drinking with the evening meal is a safe habit, calls for a leaflet containing the latest truths of science on that point to be put into the hands of all business men.

RESULTS AT ST. LOUIS

At the Columbian Exposition in 1893, in response to tremendous effort and appeal some exhibits of school work in temperance physiology from a few states were secured. Eleven years later, in 1904, at the St. Louis Exposition, with no effort made to secure it, fine specimens of work in temperance physiology from all grades were shown by most of the states as a part of their regular school exhibit.

These scientific temperance instruction exhibits at St. Louis not only show the progress of this nation in intelligent sobriety but have inspired other peoples, representatives sent from Sweden, Germany, France, and other countries, to learn how the temperance physiology that has helped to make the American a nerve-man is taught in our public schools.

STATE REPORTS

The reports that come in from the different states for 1904, are as a whole most encouraging. They show not only progress but a grasp of the vital idea that the majority of the future voters of our land whom we wish to educate to close the saloon are in the first five years of the public schools, and hence the supreme importance of having this study in each of those grades as well as in later years, with text-books adapted to grade in the hands of

all pupils who have books in other subjects.

The only state that reports the sentiment on this subject as "passive" is one where, failing to secure the weakening of the law, a Committee of Twelve for four years have been trying to make out a course of instruction that would take the study as a regular branch from the fifth year and text-books from fourth year pupils who have books in other subjects.

THE NEXT STEP

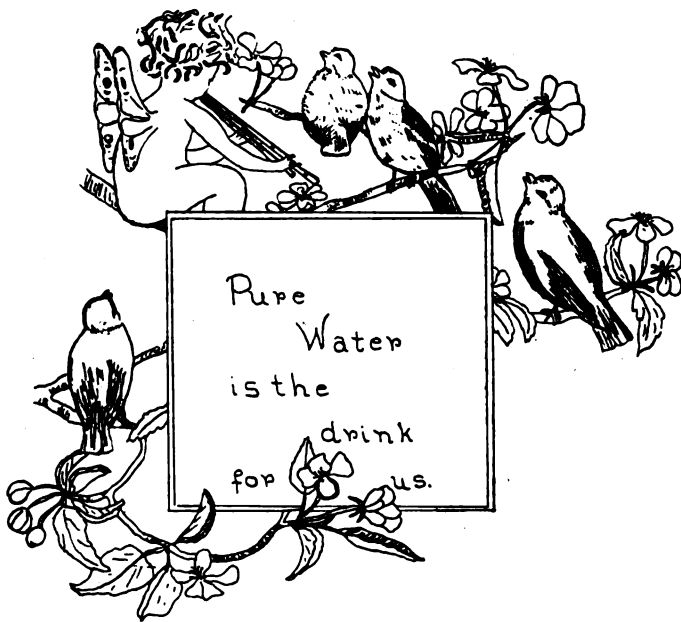
During the last fifteen months your national superintendent has visited and spoken in nearly all the northern and some of the southern states, noting over this wide area the amount of temperance sentiment as compared with that of a dozen years ago when last in those

states. The progress seen is not only most encouraging but warrants the conclusion that the hour is ripe for concentrating this anti-alcohol sentiment on the question, license or no license, in states where that question is submitted to the people.

Hence, I hope that the line of work designated as the Voters' Information Bu-

reau will be adopted by this convention. It will be a fitting sequel to the educational work that was inaugurated twenty-five years ago. The National Bureau of Scientific Temperance Investigation is constantly gathering the information that should be given to every voter, as it has been and is being given to every public school pupil in this land. Twenty-five years ago there was no SCHOOL PHYSIOLOGY JOURNAL as there is today to show the teacher how to teach this subject. Send it now to the teachers in your community.

Twenty-five years more, and perhaps less, of faithful work on our part and on that of those who come after us, and there will be no legalized brewery, distillery or saloon in all this fair land. They will have perished before the blazing light of God's truth, truth that is sure to win, dethroning this enslavement of the human race.





Primary Lessons

FIRST TO
THIRD YEARS

ST. LOUIS EXPOSITION PAPERS

EXPOSITIONS are indeed the timekeepers of progress. Never were these words of the late president McKinley more strikingly exemplified than in the exhibit of scientific temperance papers at St. Louis.

It is safe to say that at the time of the Chicago World's Fair not one primary child in a thousand had such clear ideas of the reasons for temperance and hygiene as every child of the same age, whose work was shown at St. Louis, now has.

The papers which follow are based on oral work in the classroom, followed by dictation exercises given by the teacher. They represent what the children know and what they are carrying home to parents and playmates. We suggest that teachers everywhere use these exercises as reviews or original work for their own classes, amplifying or changing the order of topics as may seem best in any case.

Tell your pupils that children all over the United States are learning these same truths, how to take care of their bodies, what to eat and drink, how to keep clean, and why tobacco and all drinks which have alcohol in them are never to be touched.

Reproduce the drawings during the regular periods for such work, letting the children copy also the mottoes referring to each.

In the hands of the skillful teacher work of this kind will be educative and inspiring, leading to greater results in the future.

(1)

FIRST YEAR

We get food from animals, plants, and minerals. We must have pure air, pure water and proper food.

Children should not take a meal when they are heated by play. Of all drinks pure water is the best.

Alcoholic drinks can not quench thirst. They make thirst.

Pat K.

We should take good care of our bodies. They are like machines.

We should take care of our teeth and skin.

Tobacco is not good for boys.

Alcohol is poison. It makes good men bad.

Sylvesta M.

Alcohol is a poison, and takes away the senses of people who use it.

It looks like water, but has a hot, burning taste.

It burns the mouth, throat and stomach like fire.

The Indians call it "fire-water."

If we want to be well and strong we must never use it.

Margaret H.

Alcohol is a poison.

It is dangerous to drink it.

It makes people drunk and crazy.

It shortens their life and ruins their health.

I am never going to drink anything that contains alcohol.

Robert D.

God made little children as sweet and pretty as the flowers. But some little boys soil their nice bodies by using tobacco. It makes their breath smell bad, and it keeps the brain from working right.

Then, sometimes, when a boy gets to be a man, he begins to drink whiskey. His eyes become weak, his brain dull, and he can not walk straight. Then his nose gets red, and everybody knows he is a drunkard.

Gertrude G.

We should not take anything into the stomach that will do it harm.

Of all drinks pure water is the best.

Muscles and nerves are stronger without alcohol.

Tobacco harms the nerves and muscles.

Alcohol and tobacco poison the blood and injure the bones.

Edwin B.

(2)

SECOND YEAR

Alcohol is a poison. It is a liquid and is as clear as water.

If you drink anything with alcohol in it, it will injure your brain.

When you drink it, first it injures the mouth, then the throat, and then the stomach.

After that the blood takes the poison all over the body. It injures the brain and turns the muscles into fat.

So we must not take any whiskey at all if we want to be strong.

Evert R.

Tobacco has a poison in it called nicotine. This poison makes tobacco bad for us to chew or smoke.

Cigarettes have nicotine in them, and when boys smoke cigarettes, this poison makes their bones so they can't grow. It *injures* the brain so they can't think so well, and they are not as good in school.

So if we boys want to be strong, tall and smart we must not chew or smoke.

Gay W.

You must keep clean or the dirt will get in the pores and it can not let the sweat out. You must eat slowly or you might get some food down your windpipe.

You must eat your food with your fork. Water and milk are healthful drinks.

You must not talk loud in any one's ear. And you must not read where the light shines in your face. You must clean your teeth before breakfast, and before going to bed at night.

You must not drink whiskey, one half of it is alcohol. It will burn the stomach and make the nerves so they can not carry orders. A man who smokes tobacco will say that a pipe full rests him because it puts

his nerves to sleep and does not carry the tired feeling to the brain and does not make him feel tired.

There is a tube that goes to the windpipe; you breathe through it.

Charlie D.

Alcohol deadens the nerves and does harm to all parts of the body.

If you go in the prison and ask the prisoners what brought them there, most of them will say "It was drink."

Once an old man said a smoke of tobacco rested him, but it only put his nerves to sleep.

You may think that when you drink liquor it will not hurt you, but it will do great harm.

Your stomach is like a kitchen, and when the cook drinks liquor the dinner will be spoiled.

When a man drinks liquor he staggers and reels *because* the nerves can not do their work well.

We must keep the body clean, else the dirt will get in the little pores and stop them up.

We need nourishing food to keep the body alive and in good working order.

We need a fork to eat with, and a knife with which to cut our meat.

The most *healthful* drinks are milk and water.

Do not read with a bright light or a dim light.

Do not pick your ear with a pin.

Brush your teeth before you eat and after you eat.

Mary F.

Alcohol looks like water but is very different. Water poured on a plant will make it grow; alcohol will kill it. Water will not burn, alcohol will. A fish lives all its life in water, but will die at once in alcohol. Water softens our food and helps it to digest.

Alcohol hardens many kinds of food. Water cools and refreshes the body, outside and inside. Alcohol inflames and irritates it. Water quenches and alcohol makes thirst. The more one drinks the more one wants.

Every part of our body needs water; and no part of the body needs alcohol.

Edgar G.

Keep the whole skin very clean.

Breathe pure air and eat wholesome food.

Alcohol

and tobacco poison the blood and injure the bones.

Of all drinks pure water is the best, for any drinks containing alcohol can not satisfy us when thirsty.

It is our duty to become strong and healthy so that we may be useful and happy in the world.

George D.

(3)

THIRD YEAR

The best drinks for children are milk and water. We should not drink tea or coffee, because it makes us nervous and we have the headache. Three-fourths of our bodies are water.

Children should go to bed early and get up early because it makes them healthy. If we went to bed late it would make us stupid and would make us have dark rings under our eyes.



"These are the best drinks for children."

We need food because it helps build up our bodies and keep them in good condition. Every day the body wears away and it needs food to strengthen it. When our shoe wears out we go and get it patched. We do not *always* get them patched. We get new ones but we *can't* get new bodies, so it is best to keep them in good health.

We should wash and clean *ourselves* up, and comb our hair and brush our clothes before we come to school. If we were not clean, the teacher would send us home and tell us to clean *ourselves* up and then come back.

Cecil R.

Many a man who is a drunkard got the liking for the drinks that have ruined him by drinking cider.

The alcohol in the cider made him want more alcohol.

After a while he craved other drinks which were still stronger of alcohol than cider is.

The more of these he drank the more he wanted, and the worse his condition became.

It is the nature of alcohol to make drunkards.

Besides injuring the health, cider and other liquors often make their drinkers cross.

Marguerite W.

Alcohol is made of apple juice and other things and is often made into medicines.

Men sometimes want to taste it. Then they want more and more until they get to be drunkards, and then it poisons their blood and kills them.

They coax other men to drink.

Men die all the time from drinking alcohol.

The government *ought* to make it a law not to have saloons.

Charles B.

Alcohol and tobacco are poisons. They injure every part of the body.

Nicotine is very poisonous. This is put in tobacco to make those who use it want more. Nicotine is also put on cigarette papers.

Alcohol is very injurious to the muscles. It makes them weak and flabby and they can not do their work. So it must injure the heart in the same way, for the heart is a muscle.

It also injures the nerves, making them weak and unsteady, so that those who use it have not a good, strong nervous system.

Alcohol deadens our senses and brain. It causes weakness of both our body and brain.

Marie N.

Beer is made of rye, barley, hops and yeast. The grains are mostly composed of starch. The starch turns to sugar. It has to be kept warm and moist to be changed to sugar. You know it is changed, when it begins to sprout.

It is then ground and soaked in water. The sugar is changed to alcohol by adding hops and yeast. It is now called malted liquor. It is a sweet drink now. The hops give it a bitter taste, the yeast ferments it.

I don't want to drink it, because it destroys both mind and body. You will never be as strong, or as well, as if you had left it alone. It makes sorrow and brings shame to the mothers and children.

You don't like beer very much when you first take it, then the best thing to do is to leave it alone. You might do any thing when you are drunk. If you once take it, you may want it all the time. Sometimes you will buy a glass of beer and leave your children hungry. If you are a drunkard you will do anything to get money to buy drink, you will even murder and steal, and then be put behind the bars, or be hung, or go to the penitentiary.

Artie L.

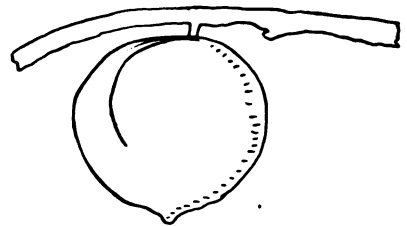
Milk and water are the best drinks for children. Tea and coffee injure children and grown people too, as they make them nervous and cause headache.

Children should go to bed early, because they need more sleep than grown-up people. Children who study hard and play hard should have all the sleep they can take, so they can keep the brain and nerves from wearing out.

Cigarettes are very harmful, as the tobacco and the paper from which they are made contain a poison which injures the boys who use them.

We need food to build up our bodies faster than they wear away. The blood carries material to repair the different parts of our bodies, and this material is taken from the food we eat.

Buentea H.



"Peaches are good to eat."
"Brandy made from peaches is a bad drink."

Lord, grant us eyes to see
Within the seed a tree,
Within the glowing egg a bird,
Within the shroud a butterfly.
—Christina Rossetti.



Grammar Work

FOURTH TO
EIGHTH YEARS

RESULTS FROM TEXT-BOOK INSTRUCTION

AS SEEN AT THE ST. LOUIS EXPOSITION

NO other one factor has been more potent in popularizing the study of scientific temperance and in securing the present gratifying results than the almost universal use, in grades above the primary, of well-graded books as one source of information.

When the first law on the subject was passed, in 1882, there was not a text-book in the world suitable for carrying out its provisions. Neither teacher nor pupil had anything to work with. Ten years later, 23 indorsed books were on the market, issued by 7 different firms. Today, this list has grown to 36 physiologies, published by 9 firms, admirably adapted to grade, and telling in fascinating style the story of the fashioning of the human body, its needs, and how it should be cared for to insure the highest degree of perfection.

The imitations of these books which crowd the market are the best evidence that their value is appreciated. But even unrevised and unindorsed books are improving. Few books in America today teach moderate drinking, as was almost universal at first. The standard has been steadily forced up and the children and the public generally are reaping the benefit.

Every paper reproduced below is confirmatory proof of the advantage of books in the hands of pupils able to use them intelligently. If this is true of work under the guidance of the skillful teacher, it is vastly more so in the case of the many teachers who must direct the work when wholly unprepared to do it justice. To all such teachers books are a necessary means of information and a safeguard against inaccuracy and exaggeration.

So far as pupils are concerned, books educate the eye as oral instruction educates the ear. Both methods are necessary to the best results. Moreover, the use of books encourages independent work. The pupil by their use finds

that he must depend upon himself, instead of looking to the teacher for everything he needs to know, one of the most valuable lessons he can learn from his school course.

The ideal text-book in physiology, as in other studies, may never be written, but every year brings such books nearer. Those now indorsed by this department are in the very front rank with books on other subjects which have been successfully taught from time immemorial, and the future promises equally well.

FOURTH YEAR

Alcohol is a clear liquid and has a sharp taste. It is very poisonous.

Hard cider, beer, ale, wine, brandy, whiskey are all alcoholic drinks, for they each contain alcohol which is produced by fermentation, or by the sugar in fruits and grain decomposing.

Alcohol has the effect of making a craving for more alcohol, and this is what makes drunkards. This is the reason a boy should never take his first drink, and then he will not care for more.

Tobacco usually makes a boy sick when he first uses it, but after a time he gets to like it and it may be as harmful to him as alcohol.

Mary C.

The Lord gave us our bodies to take care of. We should not eat too much. We should eat wholesome food. We must chew our food well. The teeth should be kept clean. Grapes and apples are healthful food when they are gathered, but when the juice is squeezed out and the juice ferments it is not good for us.

Living rooms and sleeping rooms should be aired, because they are not healthy after any person has slept in them. We should take regular exercise in the fresh air, to have strong muscles.

If a person uses tobacco his mind is not right. We should bathe at least once a week. Strong drink is not good for anybody.

Leslie Y.

Alcohol does great harm to the muscles. It is like a poison mixed in the blood and carried to every part of the body.

Sometimes it paralyzes the muscles so that they can not act, and it causes fat which is not good to form on the muscles, and makes a drunkard's body fat and clumsy. The paralysis is what makes a man weak and tottering when he is intoxicated.

If we want to be strong, we must eat good nourishing food, and not such things as burn and harm our bodies.

Tobacco will dwarf young persons, and also makes the muscles weak; it is almost as bad as drinking alcoholic drinks.

Jean McG.

Alcohol is a fiery stimulant.
Nobody drinks clear alcohol.

The strongest drinks are about one-half alcohol.

No stimulant is so enticing as alcohol, it is very easy to get into the habit of using it.

Drinking often causes dyspepsia.

Delirium tremens is one of the results of alcohol.

Wine, beer, cider, brandy, rum, ale, whiskey, and gin are all alcoholic drinks.

Alcohol looks like water, but it burns the mouth like fire.

A drunkard will give up everything for liquor.

Alcohol often injures the heart and blood-vessels.

Men who drink a great deal may look large and strong when they are really weak.

Their muscles are not hard but soft and fat.

Some men are foolish enough to drink whiskey when it is hot to make them cool, and when it is cold they drink it to make them hot.

Men and boys who smoke cigarettes have yellow finger nails.

Bennie B.



"Whenever I see on bush or tree,
A great big spider web,
say with a shout, little fly, look out!
That web seems so pretty and white,
But a spider hides there, and he's ready to bite.

"So if any one here drinks cider or beer,
I say to him now, with my very best bow,
Have a care of that lager or cider,
For there hides a wicked old spider,
And it fills him with joy to catch man or boy
And weave all about him with terrible might
The meshes of habit—the rum appetite."

If the body was made only of soft parts it would not keep in shape. It is the bony framework that gives such a firm support to the body.

It is not what we eat, but what we digest that gives us health and strength. Do not eat between meals. Do not eat in a hurry. Do not drink ice water with your meals. Do not eat or drink anything that has in it wine or any form of alcohol.

The teeth should be cleaned at least once a day. You should not pick them with any hard substance, as a pin.

The difference between the juice that is pressed from apples and grapes at the mill and

that which you press out from the fruit by your own teeth is there is no alcohol in the juice when you eat the fruit, but there may be alcohol in the juice you get from the mill. After the fruit juice has been pressed out and left exposed to the warm air for a few hours it begins to ferment.

Some people think it is only necessary to have fresh air in the day time and pay no attention to their sleeping rooms. But breathing goes on at night just as well as during the day. Our sleeping rooms should have a constant supply of fresh air.

Good, wholesome food and exercise in the open air will make strong muscle. Drinks containing alcohol will cause the muscles to turn to fat, which is a sign of weakness.

Through the sense of sight we know the color, size, and shape of objects. Through the sense of smell we enjoy many pleasures. It also tells us to keep away from harmful things.

The sense of taste enables us to enjoy many kinds of food.

The sense of touch is found in the skin all over the body. The blind have this sense highly trained.

Through the sense of hearing people get much enjoyment in this life.

Every one should take a cold bath in the morning, also two warm baths a week.

Katie D.

FIFTH YEAR

The best foods for children are bread, rice, lean meat, cereals, vegetables and all kinds of ripe fruit.

Beer is a harmful drink because alcohol is in it, and the longer you keep the beer the more alcohol comes in it. When you put yeast into bread and it begins to bake, the alcohol escapes.

The principal organs of digestion are the mouth, teeth, esophagus, stomach, and intestines.

The two uses of the blood are the repairs of the body and also life and strength.

The blood is purified in the lungs.

You can develop your lungs by taking deep breaths and outdoor exercise.

Tobacco has a poison in it, and sometimes it gets into a blood-vessel which carries it all over the body.

Outdoor exercise helps to make good blood,





because we take oxygen into our lungs, and makes the blood purified.

If you never had any nerves you might put your hand on a hot stove and burn it to a cinder.

John H.

Alcohol is a liquid that looks like water, but it is very different from water because it is a poison. It is made from fruit and grain.

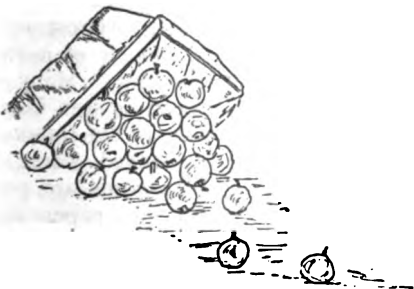
There are different kinds of drink containing alcohol. Wine is made from grapes. The grapes are put in great tanks called vats, and there the juice is squeezed out of them. Then it begins to bubble.

The sugar in the grapes turns to alcohol and gas, and the juice becomes sour. Another form of drink containing alcohol is cider, which is made from the juice of apples. It contains but very little alcohol, but enough to harm the body and mind.

Beer is made from barley, and the starch in the grain is turned to alcohol. They sometimes put hops in beer to make it sour and bitter. Whiskey, brandy, rum and gin are other alcoholic drinks which contain about one half alcohol. Alcohol makes the mind as well as the body very weak. About fourteen per cent of the people insane go insane because they have used alcoholic drinks. If a man should drink two mugs of beer a day for a year, it would cost thirty-six dollars and a half.

Deda C.

A proper drink is such as will supply the demand for water without introducing any hurtful substances. The universal drink is water.



This seems to be the natural drink. Water quenches thirst.

Some people think that beer and whiskey and cider are good drinks and will make them strong but they do not, but make the blood impure and injure the muscles.

The blood is the nutritive fluid of the body. It contains a clear fluid called plasma. If it was not for the plasma any one who was cut would bleed to death, but the plasma clots.

Alcohol is not a

food. It can not increase any one's strength. When alcohol is taken into the body it mixes with the blood

and is taken to all parts of the body. The red corpuscles are to carry oxygen, and when alcohol is taken into the body the red corpuscles become smaller and are shrunken and can not carry as much oxygen.

Tobacco contains a deadly poison called nicotine. Two drops will kill a dog or any other small animal. Tobacco interferes with nourishing qualities of the blood and prevents the proper growth and development of the body. Cigarettes are more injurious than any other form of tobacco.

If we take alcohol or any other narcotic frequently and regularly the system soon needs it.

The use of alcohol grows in this way to be a powerful habit.

Kitty W.

Hard cider, beer, ale, wine, rum, whiskey and brandy contain alcohol. All kinds of alcoholic drinks are harmful.

The bones receive nourishment from the blood. Alcohol weakens the nourishing power of the blood, then it injures the bones.

Tobacco also has a harmful effect upon the nourishment of the bones, and when the proper nourishment is not given it stunts the growth of the bones. Boys who use tobacco can not expect to be as smart men as they might be if they never touched it.

Frank Mc.

School Physiology Journal

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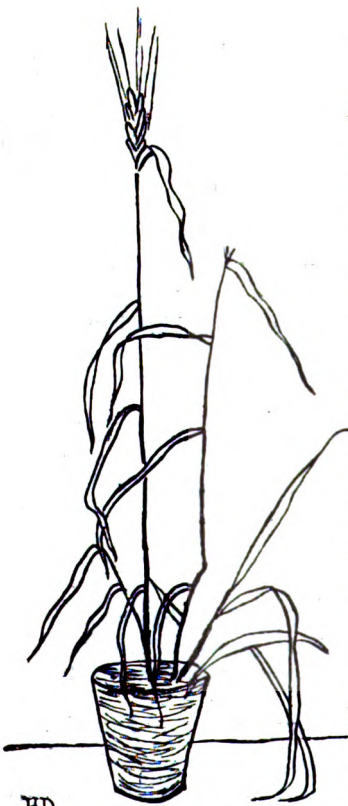
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TWO GREAT EXPOSITIONS

THEIR SHOWING IN SCIENTIFIC TEMPERANCE



ED.

AT the Columbian Exposition, in 1893, one of the noteworthy exhibits in the educational department was that of scientific temperance instruction in the public schools. Teachers, school officials and parents studied the exhibit, and went away with a new conception of the possibilities of the subject and of what it was doing for the children of the country.

Government officials from almost every civilized nation represented at the Exposition made a careful study of our educational method for the prevention of intemperance, and sent home copies of our temperance education laws and specimens of our text-books and methods of instruction. Influences were thus set in motion that ever since have constantly made themselves felt, throughout other lands as well as our own.

Eleven years have passed since the Chicago Exposition. Instead of the 38 states and 4 territories then having temperance education laws, our entire nation is now under such laws. Then about 13,000,000 children of school age were under these laws; now there are about 22,000,000. The school literature has increased, new methods of study have been evolved, and the subject has passed far beyond the mere experimental stage to one in which we can already see results, while among foreign nations also there has been progress toward adopting the educational plan for dealing with intemperance.

Another great World Exposition is just closing at St. Louis, and in view of the development of temperance education it is fitting that this great feature of our educational system should be as strikingly shown as was in reality the case.

Every section of the country was represented by the children's own work, both in the special exhibit of this department and in connection with the other school work shown by each state. No one can study the papers shown in all grades, from the first primary through the first year of the high school, without realizing that education is indeed the remedy of the future for the ills of intemperance. The truth concerning the nature and harmful effects of alcoholic drinks and other narcotics is out, and it is reaching the children. Their knowledge is crudely expressed in many cases, it is true, but it is plainly to be seen that they know more of this subject, to say nothing of that of general hygiene and right living, than did the majority of grown people twenty-five years ago.

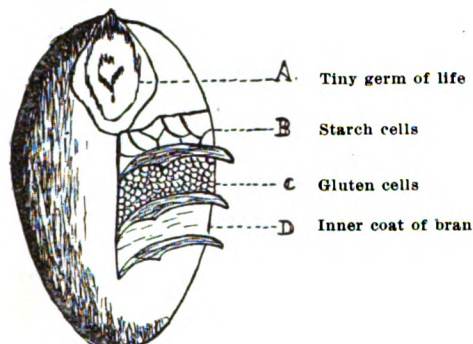
In some cases questions and topics suggested by this department were used; in other instances teachers substituted their own plans, or exhibited specimens of the regular, every day work of pupils. Results are most encouraging whichever course was followed, and this is but a beginning. When children thus instructed shall become the majority of our voting citizens, the temperance question will be solved and stay solved as long as the teaching remains a vital part of the school curriculum, educating rightly coming majorities.

It is cause for regret that from the thousands of excellent papers submitted but few can be reproduced in our columns. Almost without exception the papers were models of neatness, and clear, beautiful handwriting. Many were charmingly illustrated, as can be seen from the drawings shown in this issue of the JOURNAL. The few instances of misspelled words have been corrected, but all such words are printed in italics. In other respects the papers appear exactly as exhibited, except where they have been necessarily shortened.

THE BIOGRAPHY OF A KERNEL OF WHEAT

SIXTH YEAR

I am a little yellow kernel of wheat. On one of my sides is a dent. At one end of this dent is a little white spot. I am shaped like an ovoid. One day early in the spring, the kernel from which I grew and some more of my comrades were put into the ground in a large field in Minnesota. It was before Jack Frost was gone.



The soil they were put in was plowed in the fall. First a man put a great many of us in a seed box in a large machine drawn by horses. This machine was a seeder. He sat on this machine while the seeds were sown evenly on the plowed and harrowed soil.

After a few days the sunlight, moisture and warmth gave us a great deal of strength, and each sent a little spire of green above the ground and some roots below at the same time.

They grew from April to August. During that time they endured frost, hail, wind, a great deal of heat, sometimes not enough and sometimes too much moisture. But these things did not prevent my perfect development. At many times my young body was attacked by insects, the weevil, the chinch bug, mildew, smut and other forms of fungi. In spite of all this the sun and soil of Minnesota ripened me and I belonged to a finely developed plant.

In August, my comrades and I were cut down and bound together in sheaves. We were then threshed by a steam power machine. After this I was put into a grain elevator at Minneapolis. From there I was put upon a freight car and went by way of Chicago and New York to New Haven. There I was put into another grain elevator. Here I was until a boy found me and took me to C. St. school. There I was planted March 18, 1904. Today, June 2, 1904, I am a complete plant ready to grow new kernels.

My picture is on this page.

Amy M.

THE GERMINATION OF A KERNEL OF WHEAT

A kernel of wheat contains a tiny germ of life, a fine white powder, a gluey substance, and a strong skin. The tiny germ of life is resting, and will not awaken unless it has sunlight, heat and moisture.

Somewhere on the kernel of wheat there is a place where the skin is thinner than the rest of it. When the kernel is put into water, this thin place allows the water to pass through it. Inside the kernel is a little grape-sugar. When the water gets into the kernel, it will dissolve the sugar, and become a sweetened liquid.

When the water reaches the starch, the skin begins to burst. When the skin is burst, the oxygen of the air gets into the kernel and begins to decay the gluten. Then the result is decayed gluten.

But the decayed gluten is a ferment. So there begins a fermentation in the kernel. As soon as this ferment gets into the starch it changes it into sugar. When this is changed, the tiny germ of life begins to sprout and sends a root down to the earth and a leaf up to the air.

Hattie F.

HOW STARCH IS OBTAINED FROM WHEAT FLOUR

This afternoon we experimented in order to find out how to make starch from wheat flour.

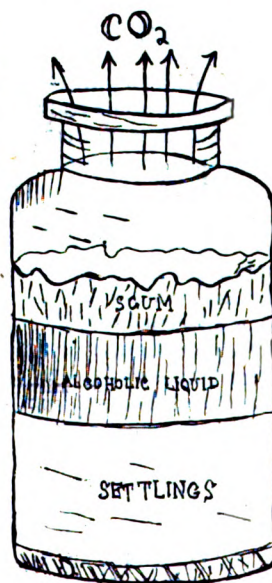
First a large glass vessel was placed upon the table and a cloth was stretched tightly over and around the mouth of this vessel.

Next some wheat flour was placed upon the stretched cloth. Water was then poured over the flour, and the water and flour were stirred until the water and all of the flour that would have passed through the cloth.

That which remained on the top of the cloth was of a creamish color and gluey. This substance is called gluten.

After the liquid of milky appearance settled in the vessel, two things remained. These two things were a white powder and a clearer liquid. The white powder was starch. The clearer liquid was water.

Wheat flour must contain starch and gluten.



The wheat flour came from kernels of wheat. Starch and gluten must be in kernels of wheat.

E. L. D.

THE MAKING OF AN ALCOHOLIC LIQUID FROM GRAIN

Men can make alcohol by letting a sweet liquid stand and decay. No man can find any alcoholic liquid already made. Man can make an alcoholic liquid from kernels of wheat if he wishes to do so. A kernel of wheat contains no alcohol.

There is much starch in grain. By fermentation, starch can be changed into sugar.

The first thing to be done to the grain is to make it sprout. Then it is heated hot enough to kill the sprout. This sprouted grain is called malt. This malt is then mashed and flooded with water. This makes a sweetened liquid. This sweetened liquid is called wort.

Yeast is added to ferment this wort. This fermentation of the wort changes it to a fermented liquid containing alcohol. The fermentation breaks the sugar into alcohol and carbonic acid gas. The gas rises to the top as bubbles, and makes a filthy yellow scum.*

The alcoholic liquid contains much water and the alcohol and water must be separated. This separation is done by changing the alcoholic liquid to a vapor by heating it. This liquid is a distilled liquid and is largely alcohol. Therefore alcohol can be separated from a fermented liquor by distillation. The alcohol usually sold is distilled from fermented molasses.

The machinery for distillation is called a still. The building where this sort of work is done on a large scale is called a distillery.

Rose F.

FERMENTATION OF SUGAR

Molasses was put into this receiver. With this molasses some water was put. The water and molasses were made into a mixture. This mixture was really a mixture of cane sugar and water. Into this mixture some yeast was placed.

In the receiver there is now an alcoholic liquid and a gas. The gas is CO_2 . In the liquid there is alcohol.

The presence of the yeast, a ferment, caused the fermentation of the sugar. The yeast, by its presence, made the sugar split up into its elements, carbon, hydrogen and oxygen.

The elements which had split apart now formed into alcohol and a gas.

A. M.

ALCOHOL

Alcohol is a poisonous liquid and can be easily lighted. It is colorless. It has a strong

odor, and stinging taste. Alcohol is lighter than water, and looks very much like it. Pure alcohol can hardly be made. Much water gets in it. Alcohol is intoxicating.

When a man becomes intoxicated he does not know where he is, because his mind is affected. He talks poorly. He cuts his words short or misplaces them because his speech is changed by the alcohol.

Sophie R.

SEVENTH YEAR

SHALL I SMOKE

Here is a question which most boys have to answer, "Shall I smoke?" It is not easily answered according to my reckoning. If a boy once begins to smoke it is hard for him to give it up. This is the same with persons who use morphine and opium.

The beginner after smoking feels the effect of the nicotine most keenly. Extreme nausea, prostration and vomiting follow, but if its use is still continued these acute symptoms disappear and slower effects appear.

It is true that tobacco has more effect on some than on others. As a rule the younger the person using tobacco, the more active will its effects be.

Tobacco is especially bad for boys. A boy who smokes or chews tobacco before he is twelve or fourteen years of age must expect to be short of stature, weak in muscle, and unfit for study.

After reading about tobacco I gave up the idea of smoking or chewing, and I would give this suggestion to boys who intend to smoke. Read about its effects on a healthy body and I think you will change your minds as I did.

Samuel A.

SHALL I SMOKE

Any boy who has common sense and who will stop for a moment and say to himself, "Shall I smoke?" will answer "No" for these simple reasons. Tobacco in any form hinders the growth, and injures the nerves and health.

The smoking of cigarettes forms the tobacco habit and may make any boy a slave to it. The cigarette habit does not help a boy in his work and may prevent him from getting a good position in business, for many reliable business establishments will not employ boys that smoke.

The following drugs and poisons are used in the manufacturing of cigarettes: arsenic, creosote, nicotine, opium and *saltpetre*, every one being harmful.

Cigarette smoking makes a boy dull and stupid and prevents his advance in school. Tobacco also creates a thirst which may lead to the drinking of alcoholic liquors.

*See illustration on page 61

Smoking is a habit that causes discomfort to others, and affects the eye, ear, nose, and also the heart.

The smoking of tobacco is expensive ; it costs more than boys can afford to have their health ruined.

I have seen boys ranging from ten to fifteen years smoke cigarettes. The result of their smoking is that they have black rings around their eyes, fingers stained from the nicotine, they are nervous, lazy, disagreeable, weak, and always out of employment.

Nathan G.

EIGHTH YEAR

THE SKIN

The skin is an elastic, flexible, and porous covering of the body. It is composed of two parts, the upper, the epidermis or scarf skin, and the lower, the corium or true skin.

The under layer contains muscular fibers, the blood-vessels from which most of the excretions sent out through the pores come, the nerves that extend into the papillæ, the oil glands that keep the hair oily, the sweat glands which secrete the waste matter, and the hair sacs that contain the roots of the hair.

The scarf or upper skin consists of cells. The upper cells are hard and flat and are constantly being rubbed off. The lower cells contain the jelly-like coloring matter which determines the color of the skin. The canals from the sweat glands and the hairs pass through this upper skin to the surface of the body.

The epidermis protects the delicate true skin. It also protects the nerves. Without it, if we exercise our sense of touch, it causes pain. It contains the pores through which half the excretions of the body are passed.

The skin may absorb liquid nourishment if it comes in contact with it.

To have a healthy skin four things are necessary :

To perspire freely at all times.

To keep the skin clean.

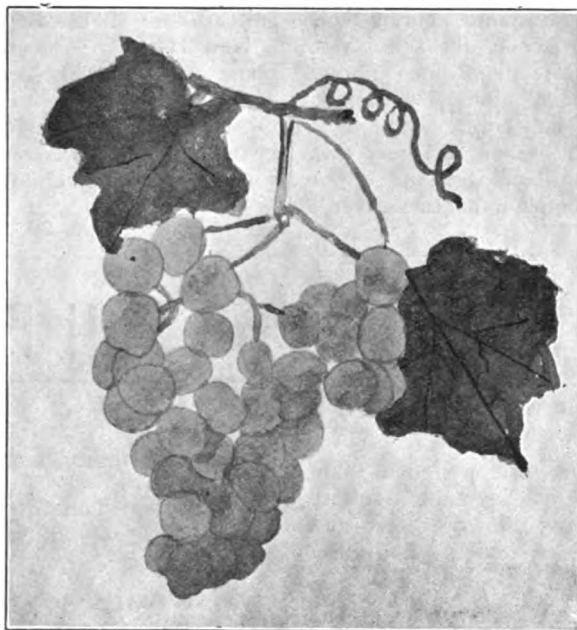
To wear clean clothing.

To breathe pure air and to live in the sunlight.
John S.

HOW SKIN DISEASES MAY BE PREVENTED

Proper care of the skin is one of the essentials for the obtaining and preserving of health. If the skin is not well cared for, diseases soon develop, which endanger life as well as health.

In order to have a healthy skin, frequent bathing is necessary. The many pores in the skin must be kept open in order to allow the sweat glands to pour forth on to the surface of the skin the impurities which they have collected. These can be kept open only by frequent baths.



Among the Indians skin diseases used to be prevalent, nearly always proving fatal. Whole tribes of the redskins have been wiped out by diseases resulting from closed pores. The Indians, in order to protect themselves from the cold, covered themselves from head to foot with bear's grease. This soon closed their pores, and brought on numerous fatal diseases, the most dreaded of which was small-pox.

Many people are today troubled with diseases of the skin. These come from

numerous causes. Cheap underclothing is often dyed with a preparation containing lead. Such underclothing should never be worn without first thoroughly washing it.

The quantity of clothing worn (including both outer and under clothing) often influences the health of the skin. The quantity should be regulated according to the health, habits, and exposure of a person, and should be such as to keep the body comfortably warm.

To keep the skin from becoming filthy the clothing should be frequently changed and cleaned. A neglect to change or clean the clothing is often the cause of dangerous skin diseases and ailments that spread very rapidly.

Hair dyes frequently prove dangerous, because they often contain lead preparations.

The constant use of alcohol or tobacco is another source of serious diseases of the skin. The

skin depends upon the proper circulation of the blood for its nourishment. If this circulation is interfered with by alcohol, the blood soon loses its chief element of life, and becomes thick and discolored; and, if the skin should already happen to be infected, it would be made a thousand times worse by the use of the alcohol.

The use of tobacco causes the pores to become penetrated with the poisonous nicotine, and does not tend to make the skin any more attractive looking or cleaner.

David R.

BATHING

Many people who are living in the present generation know nothing of the necessity of bathing to keep in good health.

The sweat glands are constantly pouring their secretions on to the surface of the skin; vast numbers of oil glands are depositing an oily substance on to the surface of it. The skin is constantly shedding its scaly cover. These facts show that baths must be taken, in order that the sweat glands may not be clogged up.

Now, many people complain that they haven't

the means of taking baths. This is not true. A sponge bath every day, with a vigorous rubbing following it, will keep any one clean and healthy, providing a warm bath is taken at least once a week.

In ancient Rome any person, wishing to present the public with some building, would have a bathhouse erected to which the people could go and obtain a good bath, free, or for some slight cost.

Would it not be more beneficial to the people if some of our rich men would, instead of presenting a library, or the like, present a few bathing houses, such as were in existence in ancient Rome?

There is no doubt that if there were places in existence now, where people could go and get baths at a slight cost they would do so.

New Haven has recently built a public bath house which is very beneficial to the poorer class of people, and it is hoped that more of these will soon be erected. It is also hoped that in the schoolhouses erected in the future there will be baths which children may use.

Samuel R.

PHYSIOLOGY TOPICS FOR DECEMBER

PRIMARY—Position. Growth and Repair. Harm in Cigarettes. Wholesome Food and Drink. Exercise and Rest. How the Body is held upright.

INTERMEDIATE—Control of the Body: Brain and Nerves. The Body's Need of Exercise through Work, Play and Study. Rest and Sleep. The Circulatory System of the Body. The Muscular System.

ADVANCED—The Process of Digestion. The Nervous System.

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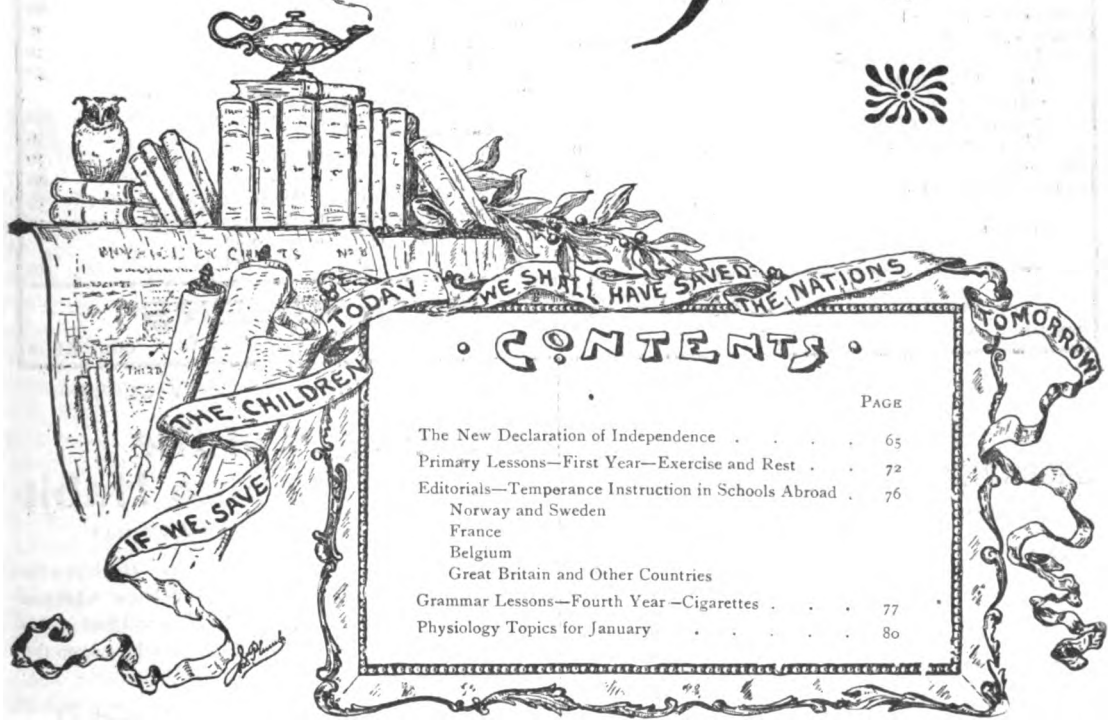
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Boston Public Lab



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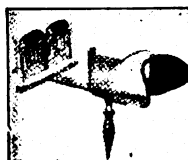
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School Physiology Journal

23 Trull Street, Boston, Mass.



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School Physiology Journal

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No. 5

COURAGE

"YET shrink not thou, whoe'er thou art,
For God's great purpose set apart,

"Before whose far-discerning eyes,
The future as the present lies !

"Beyond a narrow-bounded age
Stretches thy prophet-heritage.

"Thy audience, worlds !—all Time to be
The witness of the truth in thee !"

THE NEW DECLARATION OF INDEPENDENCE

DEMONSTRATION NIGHT AT PHILADELPHIA

WHSOEVER would successfully plan for the overthrow of the drink curse in America must think in millions and at the same time must have capacity for detail.

Twenty-five years ago the alcohol problem, to my thinking, took this form. Science, through the investigations of Sir Benjamin Ward Richardson in England and Dr. N. S. Davis and others in our own country, had proved that alcohol instead of being, as people supposed, a harmless beverage if taken in moderate amounts, is in reality a narcotic brain poison that taken even moderately has the power to create an uncontrollable desire for more that destroys the mental, moral, and physical power of the drinker and impairs that of his children.

From these demonstrated facts it was not a far cry to the conclusion that the popular use of alcoholic drinks is a menace to a government like ours, the strength and perpetuity of which depend on the character of its people.

But how can a people who have a more or less tendency to the use of alcohol, as have the Anglo-Saxon and other races that make up the American nation, be prevented from drinking such liquors was the question.

A republic like ours has no power with which it can compel majorities, for majorities make the laws. As long as a majority of the people believe in alcohol they will drink it because they like it, and they will vote for its manufacture and sale.

TEACHING A NATION THROUGH ITS CHILDREN

Hence, the first step in saving this nation from the alcoholic destruction that has over-

taken other nations was the gigantic undertaking of teaching the 50,000,000 people then in this country and those who should come later the dangerous character of alcohol and other narcotics and the physiological reasons for abstinence from their use, as well as the reasons for obeying other laws of health.

After Napoleon Bonaparte had despoiled Berlin, Queen Louise of Prussia said: "We must raise a new race of men, we must teach the children," and Germany's system of public education followed.

"A new race of men" through teaching the children is the hope in this conflict with alcohol, and if it is to save the nation, such teaching must reach, not a few in temperance societies, but all pupils in all schools.

It must be a progressive, systematic study, beginning with the first primary year and continuing through the grades to the end of the first year in the high school.

It must be a legally required study, ranking with geography and arithmetic.

An intelligent people who are not the slaves of alcohol, and who know the real character and force for evil of this poisonous narcotic, will not tolerate its manufacture and sale any more than they would that of any other vile thing that menaced the individual, the home, and the very life of the nation. The only instrumentality that can reach all the people and teach them betimes, before appetite for alcohol is formed, that the most moderate beverage use of alcoholic drinks is dangerous, and that human life and health are based on definite laws which must be obeyed, is the public schools.

Could the people be made to realize this fact and to demand that this be made a legally required study was the question that faced the national superintendent in 1882, when she entered upon the first campaign of effort to change the complexion of the map which the stereopticon now flashes on the canvas before you.*

TEMPERANCE EDUCATION LAWS DEMANDED BY THE PEOPLE

The saying of Abraham Lincoln, that "Whoever would secure the enactment of a law in this country must first write that law in the hearts of the people," was the keynote of the plans and operations which followed.

For twenty years the dear, faithful Christian Temperance Union women traversed thousands of miles over the hills and valleys of the land, in heat and cold, in storms and sunshine, explain-

*See first map on page 66

ing their errand and leaving literature, as they gathered the millions of signatures to petitions which were presented to the legislatures of the forty-five states and to the national Congress that had to be won over, one after another. Meanwhile, I was pleading with the people in public assemblies in the towns and cities, the homes of the law-makers of the different states in the land, pointing out the pending danger from alcohol as shown by modern science, pleading for the children and the land soon to be governed by them.

1882

TEMPERANCE EDUCATION MAP OF THE UNITED STATES AND TERRITORIES



States in Black have no Temperance Education Laws

With no people is the love of home, children, and country stronger than with the American. The old Roman exhortation, "See that the republic suffer no harm," came like a clarion call to foreign born as well as home born in all those audiences, impelling them to protect their own hearthstones from the ravages of alcohol, the greatest enemy of our times.

Next, came the pleading with the legislative committees and assemblies of the states and nation, and the shaping of bills to be enacted into laws that grew more specific as the years went by and showed weak places that needed to be fortified.

The charge of the Committee of Fifty that the movement to secure scientific temperance instruction in our public schools was purely autocratic is an absurdity. Never has every feature of a legal requirement been more thoroughly and deliberately wrought out before the people and by the people and their representatives in state and national legislatures than this.

THE MAP OF THE COUNTRY CHANGED

The question was twenty years before the country from the passage of the first temperance education law, in 1882, to the passage of the last law, in 1902, which changed the complex-

ion of the temperance education map of this country to that which is now thrown upon the canvas.* The 22,000,000 children of school age in the United States are under these temperance education laws.

This map represents America's second Declaration of Independence. The American has always taken education seriously. The founders of this republic said that kings and emperors were not necessary. If the conscience and understanding are enlightened, men are capable of self-government. Then these founders, our fathers, built churches and school houses and launched this government of the people, depending for its perpetuity upon God's blessing on the work of the church, the home, and the school.

No student of the history of our nation as expressed in its government can fail to see that there has been growth in what we may call an enlightened public conscience since the days when our national constitution was so framed that human chattel slavery could be tolerated. While there is yet much left to be done before the millennium comes, the event has proved that the fathers were not afield in their dependence on the enlightened conscience.

And now, as science is showing that alcohol destroys capacity for self-government, the American of our times, like his forefathers, turns to education and says, "Our free public schools shall teach these facts concerning alcohol and other narcotics, as a part of physiology and hygiene, to all the people in the plastic period of childhood, when the human mind is as wax to receive and as granite to retain, and before an alcoholic appetite is awakened."

1902

TEMPERANCE EDUCATION MAP OF THE UNITED STATES AND TERRITORIES



States in White have Temperance Education Laws

FORMULATING A NEW SCIENCE

But securing laws requiring a new subject like this to be taught all pupils in all schools

*See second map on this page

was only one step. In order that the subject might be so taught that it would make an impression, somebody must gather the facts the children ought to know and put them into intelligible form in school manuals; and must make out courses of study adapting this subject matter to all grades of pupils. In other words, the temperance education laws when first enacted required a new science taught, the school literature of which was then unwritten.

This science is the physiological reasons for obeying the laws of health, including those relating to abstinence from alcoholic drinks and other narcotics.

The facts constituting this science are derived from many other sciences. Among these are anatomy, physiology, hygiene, chemistry, therapeutics, toxicology, bacteriology, pathology, pedagogy, and psychology including child study.

Twenty-five years ago no one had collected from their many sources the truths necessary to be taught as a guide in the formation of habits, or collated them in series of graded text-books adapted

to the progressing capacities of the public school pupils of this country. Without such text-books this study would have failed. No teacher could roam over so vast a field to secure the matter for each lesson.

The national director of the Bureau of Scientific Temperance Investigation, whose study is here shown upon the canvas, did not write the temperance physiology text-books that millions of children are studying in our public schools, but she did collect for the authors truths that these books contain and prepare the courses of study that are now international.

But long before this, in the earliest stages of the work, before any temperance education laws had been enacted or any book written, she studied the problem at first hand. The Woman's Christian Temperance Unions made appointments for her to speak in nearly all the states. Entertained in the homes of the people,

studying their institutions, society, visiting their places of education, of industry, as well as of penal reform, she was everywhere quietly trying to find what the fallacies were that led the people to begin to drink.

The nature of alcohol accounts for what follows such a beginning, but what the delusions are that lead the uninformed to enter the rapids was her question. Convinced from this study that there is not an excuse for beginning to drink which is sustained by modern science, she was ready for the periods of law and text-book making that followed. For twenty years, side by side with this legislative work, she has kept up an exhaustive study of the investigation concerning alcohol in the laboratories of the world, and of the findings of science in all languages

on the subject of its nature and effects as a beverage.

AN ARSENAL OF TRUTH

The results of this investigation constitute the largest card catalog collection of truth on this subject in existence. Its value to the cause of total abstinence is incalculable. It constitutes an arsenal of truth ready for any

emergency or attack upon the great fundamental truths, the basis of the temperance reform, that are being taught the children of America.

In the picture on page 74 is shown the Cabinet in which some of the results of these investigations, topically indexed, are on file.

From the first, the national superintendent of this department realized that this effort to teach the people why they should not use alcoholic drinks would not be a success, unless the reasons for such teaching were based on demonstrated truth. Hence, not a statement was allowed to stand in the indorsed physiologies that could not be defended by good authority at the time it was written. The indorsed physiologies have often been attacked by uninformed and belated critics, but have as often been successfully defended. These attacks and defenses have been and are a providential method for the promulgation of truth.



Mrs. Hunt in her Study

At the desk in the picture on page 69, surrounded by dictionaries, books and pamphlets galore, sits Mrs. Transeau who sixteen years ago began to help in the research work for this cause. In the corner near the window is her stenographer. She seems to be examining the "Index Medicus," a monthly publication which gives the titles of all articles, speeches, or books given to the public during the previous thirty days in any language on all topics in physiology, hygiene, alcohol, sanitation, etc., including reports of laboratory work. Whatever appears from this or other sources is immediately secured, imported when necessary, translated, and carefully indexed.

When the national superintendent wishes to know the latest testimony of science on any of these topics, a bell rings in this room and this helper brings to her the testimony and evidence on all sides of the question up to date. Thus the cause of temperance education is kept abreast with the march of progress.

THE CORRESPONDENCE ROOM

There are more than 200,000 Christian Temperance Union women in this land. Looking after the enforcement of the temperance education law in the schools, each in her own community, is a part of the work of these earnest women. Not every one of them writes the national superintendent every day, but every day letters come from women in many states who want information of some kind.

One is going before the school board in her town or city with a petition for the adoption of indorsed text-books in temperance physiology adapted to grade for pupils' use.

Another writes, "The children complain that the study is too hard." She must be told that the trouble is that books too advanced for grade are being put into the hands of these children, which is wholly unnecessary because courses of study, beautifully adapted to grade, have been prepared in this subject, showing just what topics pupils in each school year can understand and need to know, and what they will be interested in; also that text-books in considerable variety are all ready for each grade. Samples of these books must be sent this woman and other helps to meet her needs.

A third writes that she is to go before the teachers' institute in her county where the teachers have been influenced by the Committee of Fifty or by Professor Atwater. She must be informed as to the facts in the case and given helpful suggestions. Still another wants to know how to meet this or that objection. In addition, there is continued correspondence with state, county and local superintendents.

There are 22,000,000 American children of

school age under temperance education laws. Not every one of them writes to the national superintendent every day, but letters often come from boys and girls saying they are to write compositions or essays on some phase of the alcohol question and want information. These letters must be answered, for among them may be the future Abraham Lincoln who will write the final emancipation proclamation of *no saloons in America*.

There are 450,000 public school teachers in our country who are under legal obligation to teach the physiological reasons for obeying the laws of health, including those relating to abstinence from alcoholic drinks and other narcotics. Frequent letters come from many of these asking about the various phases of this subject that they meet in daily school work.

Ministers write, "I am to preach on the temperance question. Can you send me the latest scientific and educational facts?" Doctors write, "I am to read a paper before a medical society on the question, Are the school temperance physiologies accurate? Can you help me to incontrovertible testimony?"

These are only a few samples of the questions that are daily answered with the mechanical help of the typewriters in this room. More than 10,000 letters a year and material for 2,000,000 pages of original temperance literature go from this room to all parts of our own and other lands. These letters and accompanying literature are helping to make Americans what the English call us, "a nation of water drinkers."

The national superintendent, when at home, reads all the incoming mail, dictates and gives general directions for answering the same. Important letters that must have her personal attention are forwarded or await her return from the lecture trips to teachers' institutes which each year are taking more and more of her time.

Three secretaries are constantly at work in this room. A fourth is needed to keep all letters answered and to meet the general demands of the work. These secretaries, Miss Stoddard, Miss Gurney, and Miss Grant, are trained workers who have served the cause of scientific temperance instruction in this capacity for many years.

THE SCHOOL PHYSIOLOGY JOURNAL

For more than two hundred years the question of how to teach the three R's has been debated in educational journals and in schools and gatherings for the information of teachers. But temperance physiology is a new branch in our public schools. The average normal school or institute instructor or common school teacher is not sure of the facts that are to be taught in this new science, and less sure how to teach

the same. Most writers for school periodicals of to-day are as far afield. Hence, little or nothing is found in the average educational paper on this subject, and the publication of the *SCHOOL PHYSIOLOGY JOURNAL*, a monthly magazine, is an imperative necessity.

At her desk in the picture on page 73 is Miss Mirick, the assistant editor of the *JOURNAL*. The picture of the editor-in-chief in her study is shown on page 67.

Each number of the *JOURNAL* contains material that can be found nowhere else in the world, model illustrated lessons in temperance physiology for primary, grammar and high school grades. Each lesson is accompanied by expert testimony of science in support of the truths taught in the lesson, for the teacher's use if too advanced for her class. She will teach with more force and assurance if she knows that she is imparting assured truth. In addition to this help, the lessons are pedagogically of the greatest value to the teacher.

If a copy of the *JOURNAL* should reach each month for the next ten years reach every one of the 450,000 teachers in America who are training the 22,000,000 children of school age under scientific temperance instruction laws, it would hasten by as many years the coming of the day that ere long will dawn on *America with no Saloon*.

DEPARTMENT EXPENSES

The question is often asked, how are the heavy expenses of the Bureau of Scientific Temperance Investigation met, as well as those of the Department of Scientific Temperance Instruction in the public schools. The carefully kept accounts of these two lines of work are officially audited each year. The vouchers show that between \$8,000 and \$9,000 each year (this year \$8,035.19) are expended in literature, foreign and American, wages to secretaries, printing, postage, office supplies, traveling and other expenses for the department.

Toward meeting this large outlay the national Woman's Christian Temperance Union pays \$800 per year, not quite one tenth of the whole. The burden and anxiety of raising the remainder falls upon the national superintendent who must obtain it by contributions solicited from persons who see the relation of this form of education to the preservation of the republic. The intimation, originally made by the brewers, that Mrs. Hunt has personally profited by the sale of indorsed text-books on temperance physiology is untrue in every particular. She has given not only twenty-five years with no salary but the proceeds from her literary work and lectures to help meet the constant demands of the work dearer to her than life itself.

These facts she never states unless they are wrung from her in defense not of herself but of the work.

But sacrifice has its rewards.

The child is born who will see the last legalized saloon, brewery and distillery of alcoholic drinks disappear from the land, if we now do our part.

How old that child will be when this disappearance occurs is the question of the hour.

In searching for an answer, it is legitimate to expect that from the momentum now acquired a greater gain in anti-alcohol and no-saloon sentiment will follow in the second than did in the first fifteen years of general scientific temperance instruction in the schools of the nation.

In 1890, the first text-books which had largely been revised and adapted to grade began to go universally into the hands of the pupils in the public schools and to be used with tolerably good methods of instruction.

RESULTS ALREADY ACHIEVED

Here are some of the results to which this instruction has contributed, through increased knowledge of the laws of health, including those that teach abstinence from alcoholic drinks and other narcotics, and better obedience to these laws:



The Research and Translation Room. See page 68

1. A gain in the decade, 1890-1900, of 4.1 years in the average length of life in the United States.

2. The smallest per capita consumption of alcoholic drinks of any of the great nations.

3. A reduction of 70% in the gain in per capita consumption of alcoholic drinks in the United States.

And this in spite of the enormous foreign immigration which has flooded the country during this period.

4. The sobriety of the American workman acknowledged to be an important factor in the nation's industrial and commercial progress.

For 15 years the schools have been teaching that alcoholic drinks impair working ability. A constantly increasing number of employers require abstinence of their employees. Nearly 1,000,000 railroad men on 200,000 miles of track in the United States are required to be abstinent.

"Certainly we could not have made the immense strides industrially that we have in the past seven years unless the great masses of our skilled workmen were temperate."—*Wall Street Journal* (N. Y.), January 19, 1904.

CREATION OF TEMPERANCE SENTIMENT

While there is immense ground for hope in the preceding facts, the sure foundation for ultimate and not far off victory rests on another and most important factor. It is estimated that 5,000,000 votes were cast in this country this year for local closing of the saloon. Every attempt to prove that there is scientific defense for even the most moderate drinking of alcoholic liquors has fallen to the ground.

Truth imperishable and invincible cuts its way while error falls before it. But God never does our part. It is our part to get the truth to the people, to the majority which in this country is the law-making power.*

The saloon exists today by the will of the majority of the voters.

A majority of the voters of tomorrow are in the first five years of the public schools of to-day.

Thorough scientific temperance education in the first five school years means future no-saloon majorities.

Neglect of scientific temperance education in the first five school years means future saloon majorities.

I will tell you how old that child will be who will see the last saloon go from your state, if you will tell me how you are enforcing your

scientific temperance instruction law; whether you are putting an oral lesson book into the hands of the primary teacher as a guide for oral instruction of the pupils in the first three primary years, and an indorsed primary text-book into the hands of fourth year pupils, with a more advanced book for fifth and sixth grade scholars, another still more advanced for seventh and eighth grades, and a high school book for first year high school pupils; and if you are sending the *SCHOOL PHYSIOLOGY JOURNAL* to all your teachers.

With these helps to new and interesting study each year, and the *JOURNAL* for teachers, good work will be done and intelligent temperance sentiment will be created. Without them it can not be.

How many lessons per year are required? Three or at most four lessons per week for ten weeks of each year will cover the subject as shown in our courses of study.

A PROPHECY OF GOOD TIDINGS

The time and scene have changed.

It is not the year of our Lord 1904, but four years later, and we are not in Philadelphia but in the south watching with the citizens there for the latest news. Thrown upon the canvas are the*

1908 Texas Election Returns

The last legalized saloon
voted out of the Lone Star State

Mrs. Stoddard, President of the Texas Woman's Christian Temperance Union says, "Persistent education in the schools and of the voters has brought this result. Texas, the largest state in the Union, is the first to drive out the saloon through local option."

1909 Ohio Election Returns

The last legalized brewery, distillery,
and saloon voted out of Ohio to-day

Mrs. Clark, state president says: "Following the publication and world-wide reading of 'Uncle Tom's Cabin,' Mrs. Harriet Beecher Stowe, the author, was presented to a great audience in London. A beautiful gold bracelet on which was inscribed the date of the emancipation of slavery by act of the British government was given her with the request that she should have recorded in the vacant place designed for it the year when America should abolish human chattel slavery.

*The inclosed paragraphs which follow were thrown upon the canvas in turn

"Mrs. Stowe replied, 'I accept with appreciation the gift with its instructions, which I will transmit to my daughter who in turn shall transmit it to her daughter. Perhaps in her life time the awful system of human chattel slavery now hopelessly entrenched in custom and power may be abolished in free America and that far away date inscribed on this beautiful bracelet.' But in less than ten years Abraham Lincoln signed the Emancipation Proclamation.

"So this second emancipation has come sooner than we at one time dared to hope. God's blessing on scientific temperance education in the public schools and the education of the voters through the Voters' Information Bureau have done it."

Mrs. Chambers state president says: "Pennsylvania was the first state to enact, in 1885, a strong scientific temperance education law with a penalty. During the subsequent years it has been well enforced, and the abolished saloon has followed."

1920 New York State Election Returns

The last saloon, brewery, and distillery of alcoholic drinks voted out of the Empire State today

Mrs. Graham, state president says: "Scientific Temperance Education in the public



The Correspondence Room. See page 68

1916 Illinois Election Returns

The fires have gone out in the distilleries of Peoria. The last legalized distillery, brewery, and saloon voted out of this state today

Miss Marie Brahm, state president, says: "We had enacted in 1897 the best temperance education law in the country, and we have enforced it in the public schools of the state, and have worked to the voting list as well, after the plan of the Voters' Information Bureau, and here is the result."

1919 Pennsylvania Election Returns

The last legalized saloon, brewery, and distillery voted out of the Keystone State today

schools, the Sunday Schools, the Loyal Legions and all other temperance efforts have done it."

1925 America and No Saloon

By the vote of the people, the manufacture and sale of alcoholic drinks are abolished in the United States.

Through the schools and every other possible avenue the truth as revealed by modern science against alcohol for twenty years has been spread broadcast. God's spirit has energized it. The vote today represents the intelligent moral conviction of an overwhelming majority of the American people, that alcohol as a beverage is by nature an outlaw that should be banished from human habits and shall be banished from the traffic of the nation.

MARY H. HUNT,*

*Director Bureau of Scientific Temperance Investigation and Superintendent Department of Scientific Temperance Instruction of the World and National Woman's Christian Temperance Union



Primary Lessons

FIRST YEAR

EXERCISE AND REST

IT is a sad commentary on the work of a school when children acquire brain power at the expense of a crooked or deformed body, and yet this occurs over and over again.

A healthy child sits and stands well until he enters school. He will continue to do so under proper physical conditions. If, instead, he grows round-shouldered or one-sided it is proof positive that something is wrong.

Perhaps the desk is too high, or too low, or ill fitting in some way. In other cases, the working periods are too long, and the child has not been allowed sufficient opportunity to move about and exercise freely. Again, slight faults in position have not been corrected, but have been allowed to increase until they have become serious defects.

Whatever the cause, it should be ascertained and removed at once, but better than any remedial measures is such careful attention from the very first to correct sitting, standing and walking as will keep the child as erect and robust in school as he naturally is before entering.

Much of this responsibility falls of necessity upon the teacher of the entering class. If the little ones are given right physical training at the start it will be easy to continue the work, and there will be few faults to correct. First of all, let each exercise be interesting, put in such form as will appeal to children.

Play as well as work is ten times more attractive if done from some motive, and this should vary with the exercise. Sometimes it is to make a particular muscle strong or skillful; sometimes it is to limber the spine, or give a graceful carriage to the head. Whatever the movement, the children should know what it is for before learning how to take it.

(1)

EXERCISE OF THE WHOLE BODY

Bring the smallest child in the class to the

front of the room. Ask who has a brother or sister at home that is smaller yet.

Can these baby brothers and sisters walk and run as fast as you can? Why not? Why do they often fall down when they try to walk?

Show the children a picture of a baby trying to walk. Ask what this baby is doing? Sometimes his mother puts him in a little wooden frame? How does that help him to stand? How does he learn to walk?

Who has longer legs and arms, you or this baby? Whose body is the larger? What can a baby do to grow larger and stronger?

Tell stories about the Indian papoose that is strapped in its basket all day, and the Italian bambino whose legs and arms are fastened close to his body by the square of cloth that is folded around him.

Which baby do you think will grow faster and learn to walk quicker, your little brother at home that can roll about and can move his arms and legs as much as he likes, or these babies that have to sit or lie still all day?

Compare your own arm with one of the children's arms. Which is the larger? Ask what makes your arm larger. What can children do to make their arms larger? their legs? their bodies?

Some child will probably have the right idea by this time. If not, tell them that every part of the body grows by being used.

If we want stout legs and arms, we must give them something to do every day. If we want to grow fast, we must use our whole bodies.

GAMES

Games and plays for children should be chosen with a view to their formative influence on bodily health and grace of movement. They should also be of such a nature as to appeal to the child.

At first, the teacher should play with the children, directing every game and exercise, showing the children how to play, and making the plays really helpful.

Many plays can be invented by imitating objects in nature.

Let us play we are a row of little maple trees. How shall we stand? Just as tall as possible. Heads up, chests high, weight mostly on the balls of the feet, arms at the sides.

Now the wind blows. It sways us to the right and to the left. It bends us forward and backward, but we do not fall.

Similarly, the children may play that they are a field of wheat, stalks of corn, tall sunflowers, or a weathercock, a church spire, or a group of mountain peaks reaching up towards the sky.

At other times, let them play they are birds or lambs or kittens, and imitate the motions of each of these animals.

Familiar occupations are interesting to children, and are helpful in giving exercise to every part of the body. Let them play farmer, going through the motions of preparing the ground, sowing the seed, cutting the grain and bringing it home. —

Another day, let them play miller as he grinds the corn and wheat; then mother as she sets the sponge and bakes the flour into bread.

Again, the class can be carpenters building a schoolhouse or a house to live in; a shoemaker making shoes; a woodchopper, or a miner getting fuel to keep us warm.

Household occupations such as washing, ironing, sweeping, dusting, etc., may also be performed in pantomime by the children led by the teacher.

In all cases, tell about the need of such work in the home and outside, the right ways of doing it, and how it helps to make the worker strong and healthy.

In all games played with children, the teacher herself will be a model of courtesy and thoughtfulness. In this way, the children who always imitate those they are with will unconsciously become fair-minded, polite, unselfish, and kind to others.

(2)

EXERCISE OF THE PARTS OF THE BODY

In addition to games and plays which exercise the whole body, each part of the body needs special exercise to give it proper freedom and ease.

Watch the children to find which parts of their bodies are most undeveloped. These are the parts that need special attention.

When the children stand, notice which ones do not take a firm position on their feet. Call such children to the front of the room where they can watch the teacher when exercises for the feet are being given.

See that the feet are placed flat on the floor

pointing outward when the class take position, and that no seat is too high for any child.

Foot drill. Raise the right foot, cross it over the left. Bring it back to position. Repeat with left foot.

Leg drill. Stretch right leg forward, to the side, backward. Swing leg forward and backward. Repeat with left leg.

Trunk drill. Bend at hips forward, backward, to the right side, to the left side.

Arm drill. Stretch right arm forward, to the side, backward, over the head. Repeat with left arm. Repeat with both. Swing arms at side.

Hand drill. Clap hands, right over left, then left over right. Open and shut fingers in turn, then all together.

Head drill. Bend head slowly to right, to left, forward, backward. March around room wearing paper caps, then with sheet of paper or cardboard on head.

(3)

BREATHING EXERCISES

Special attention must be given to the way children breathe. If a child breathes through the mouth instead of the nose, find out what the trouble is.

If he has difficulty in breathing properly, consult a physician.

Practice deep breathing from three to five minutes at a time twice a day, using one or more of the following exercises:

Have the class stand erect, weight on both feet, hands on hips.

Inhale (breathe in) slowly and deeply through nostrils. Exhale (breathe out) slowly through nostrils.

Repeat, exhaling through mouth.

Inhale slowly, while raising arms at the side to the level of the shoulders. Exhale, letting arms drop slowly.

Inhale, rising slowly on tiptoe. Exhale coming back to position.

Run slowly a short distance out of doors,



Editorial Room of the School Physiology Journal. See page 63

keeping mouth closed and breathing through the nose.

Quicken the pace gradually, then increase the distance, taking care that no child breathes through his mouth, and that no one overexerts himself.

Before taking any of these exercises, see that each child's clothing and shoes are comfortable, with no tight bands or garters to hinder the freest possible movements.

(4)

REST IN CHANGE

Ask the children to watch a bird or squirrel for a few moments. What were some of the things you saw it do? Who can think of a reason why it does so many different things in a day?

Why do you not like to do the same thing all the time?

How do your legs feel after you have been running or jumping rope? How do your arms feel after you have been holding baby, or carrying a heavy bundle?

Why is it that even when you are tired of playing one thing you feel rested enough to go on playing something else?

After asking such questions as these to bring out the children's own thoughts, tell them that every part of the body feels tired and needs to rest after it has been used.

If we have been sitting still, using our arms until they feel tired, we may still feel like running because our legs were not busy while we were using our arms. This is the reason we like to run and play after we have been sitting still in school.

After we are tired playing, we like to sit still and use our hands and arms or our heads, because those parts of our bodies do not have so much to do when we run.

Tell something you feel like doing after you have been spinning a top or playing marbles; after you have been sitting still.

Why do you like to have something to do at the blackboard after you have had seat work? Why do you like to sit still after marching?

(5)

REST IN SLEEP

If you did something different every few minutes could you keep on all night playing or working, as well as all day? Why not?

We can rest one part of the body for a time by using some other part, but after awhile all parts get tired and need rest. How can they get it?

Explain by telling the story of

ELSIE'S DREAM

Do you ever have to go to bed before you want to?

Elsie did. Almost every night mother would come with her little white nightgown long before she was through playing, and off she had to go to bed.

Sometimes this made her very cross, and at last mother thought she would try a new plan. She said nothing about bedtime, although it was long past the hour.

Elsie had a fine time playing with her ball and brother Ned's trumpet, but at last they both dropped to the floor and

she climbed into the big chair to rest.

Old Max snuggled up as close as he could and then a very strange thing happened. He began to talk, and this what he said:

"Don't you think I'm a pretty big dog?"

"I'll tell you what makes me such a big, strong fellow.

"When I was a very little puppy I slept most of the time. When I grew larger I did not need so much sleep, but I went to bed before dark every night and slept till morning.

"The door of my kennel was always open, so I had pure air to breathe.

"I never had a light in my kennel, because it is better to sleep in the dark.

"My clothes do not go off and on as yours do, so I can not hang my day suit to air at night and my night clothes to air in the daytime like you, but I do what I can. I shake my coat a good many times every day.



Mrs. Hunt's Study, showing Cabinet of Scientific Quotations. See page 67

"I take a bath very often too, and that keeps me fresh and clean."

"You talk just like mother," said Elsie. "That's what she said today."

"My little girl must have been dreaming," said mother when Elsie told her the next morning what Max said.

Max said nothing when Elsie asked him about it, but she was quite sure she saw him wink.

She did not have to be told twice to go to bed the next night.

When seven o'clock came she got ready for her bath without a word.

All the clothes she had worn during the day were hung up on the foot of the bed to air.

Her window was wide open, and she did not once ask to have the light left to go to sleep by.

"I guess I know as much as a dog," said Elsie, "if Max does know a lot!"

Max winked again but said nothing. He did not need to give Elsie any more advice.

Tell this story to the children near the end of a school day when they begin to feel tired and restless.

Talk over the main points which they need to remember. Why everybody needs sleep, and children more than grown people; what time they should go to bed, and how long they should sleep; why they need pure air in their bedrooms, and how they can get it without danger of draughts; why one should not wear the same clothing at night that he has worn during the day, and why clothing that has been worn should be aired before it is put on again.

Explain, too, why it is better to sleep in the dark, because one sleeps more soundly and wakes up in the morning feeling more rested. Then, too, the air in the bedroom can not be so pure when gas or a lamp is left burning.

Find out little by little the children's present habits about going to bed, and suggest a better way when such is needed.

The old proverb,

Early to bed, and early to rise
Makes a man healthy, wealthy, and wise,

written on the board, and memorized by the children may close the lesson.

EDUCATIONAL HINTS

The object of an education is that a man may benefit himself by serving society.

A formula for education is happiness through useful activity—animation, kindness, good-cheer, patience, persistency, willingness to give and take, seasoned with enough discontent to prevent smugness, which is the scum that grows over every stagnant pond.

Freedom can not be bestowed—it must be achieved. Education can not be given—it must be earned.

Without animation, man is naught—nothing is accomplished, nothing done. People who inspire other people have animation plus.

A man who is not moved into ecstasy by ecstasy is hopeless. A people that has not the surging, uplifting, onward power that ecstasy gives, is decadent—



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of no influence in the world.

Education is simply the encouragement of right habits—the fixing of good habits until they become a part of one's nature and are exercised automatically.

Man gets his happiness by doing.

ELBERT HUBBARD.

THE CALL OF THE NEW YEAR

"Another year is but another call of God.

To do some deed undone and duty we forgot;

To think some wider thought of man and good;

To see and love with kindlier eye and warmer heart,

Until acquainted more with Him, and keener-eyed

To sense the need of man, we serve

With larger sacrifice and readier hand our kind."

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TEMPERANCE INSTRUCTION IN SCHOOLS ABROAD

EVEN cursory examination of foreign journals shows how rapidly the American plan of preventing intemperance by early instruction of children and youth is being adopted abroad.

NORWAY AND SWEDEN

The Miner, edited by Professor Johan Bergman, Ph. D., of Sweden, contains a recent article by Professor Haslin which says:

"In the plans for the Norwegian Middle School, it is prescribed that one hour every week must be occupied with the anatomy of the human body and the elements of hygiene. The law also says that instruction must be given on the effects and dangers of alcoholic beverages. The children must be taught that a continued use of such beverages, even if it never comes to intoxication, has a dangerous influence on almost every vital organ of the body, and that it brings the individual into such a condition that he can not be without them."

FRANCE

As is well known, the school authorities in France have for a long time past been favorable to temperance instruction in the schools. By request of the highest chief of the schools, M. Buisson, the minister of education a few years ago issued a circular to the teachers urging them to do their best among their pupils to create a dislike for alcoholic beverages, and to represent strongly to them the dangers of drinking for the individual and for society.

This official circular was followed by a complete program for higher schools and seminaries and also for common schools. The intention was to give the whole school instruction on anti-alcohol subjects equal to the instruction in natural history and ethics.

The new school law of May, 1902, requires the school authorities in France to provide anti-alcohol instruction.

In the last grade of the intermediate department, one hour every week must be occupied with physiologic studies. Alcoholic beverages are mentioned among the poisons to be studied in connection with the nervous system.

In the higher grades of the high schools is prescribed a course on animal and vegetable physiology besides twelve lectures on hygiene, half the time to be spent on the study of alcohol and its hereditary effects.

The program for ethics in the highest grades requires the teachers to pay due attention to the dangers of using alcohol, to its physical, moral, and social effects, and to the moral depravity, and pauperism caused by it.

BELGIUM

In 1899, a superintendent of schools in the district of Limburg and Belgium started a temperance society after the pattern of the English Band of Hope.

The same year the minister of education issued a circular recommending this temperance work in all the schools, and shortly afterward another stating that all pupils studying to be teachers must have instruction on temperance.

The law now in force in Belgium prescribing instruction in temperance gives very strict rules for the study which must be pursued in every school. The teachers must be prepared to give special lectures, to show colored pictures, and give other suitable illustrations, taking about one hour each week. Pupils in the higher grades take notes which are corrected by the teacher.

Some time ago King Leopold offered a prize of 500 francs for the best text-book on this subject, and in 1899 the government offered a prize of 1,000 francs for the best set of wall pictures and charts for the teaching.

OTHER COUNTRIES

In Switzerland, Holland, Finland, and Denmark instruction is given in connection with other subjects. It is not prescribed by law, but by the minister of education. Text-books have already been prepared and are in use.

Recent agitation in Great Britain in favor of better teaching in physiology and hygiene, with special reference to the nature and effects of alcoholic beverages and other narcotics, has already been noted in recent issues of the JOURNAL. There is no more encouraging sign of progress in this work in any land than the action last year of British physicians looking toward thorough, systematic study of this subject by all pupils in all schools, particularly those in the lower grades, and the adoption in certain cases of American indorsed physiologies and courses of study, pending the preparation of suitable works at home.

Grammar
Lessons

FOURTH YEAR

CIGARETTES

"IT is an ignorant man who is satisfied with the public school system of the United States; and a very ignorant man who is not proud of it."

Such is the conclusion of a careful investigator after studying schools and school life in different parts of the country for a year, and it is one to which most careful observers will assent.

In no other country in the world are such educational possibilities open to children, and nowhere else has so much already been accomplished through the public schools. But what has been done is insignificant compared with what might be achieved if every child should be kept at his physical best.

Unfortunately, many are now handicapped by faulty surroundings in the home, by diseases that could be prevented, and by bad habits. These conditions must all be changed before there can be adequate returns from our great educational investment.

This is very largely the work of the school. It must teach the children what good health is, and how it depends upon right living at home and everywhere else; it must use its influence to have every child well fed and suitably clothed; and it must see that all signs of disease are brought at once to a doctor's attention. Most of all, it is the business of the school to know what habits the child is forming, and by example and instruction to make sure that these are such as will be a help instead of a hindrance to him after he leaves school.

Teach good habits first, and the conditions which make for health and growth. Then bring out ways in which both may be injured, perhaps for life, by the practice of bad habits. The lesson which follows shows

WHAT THE CIGARETTE IS RESPONSIBLE FOR

in stunting growth and injuring health, in weakening brain power, and in degrading morals.

Aesop's fable of the fox and the lion's den may be told to introduce the question.

In order to catch his prey more easily, the lion once sent word to all the beasts that he was ill, and that they were invited to come to his den to see him, inasmuch as he could not go to them.

Many accepted the invitation, but the fox kept aloof and refused to go.

When the lion sent to ask why he alone did not come to pay his respects as the others did, the fox replied that he feared to enter the cave, because he had noticed that while there were many tracks leading into it, none were to be seen coming out again. For this reason, he preferred to remain outside where he knew that he was in no danger.

Ask the class if they know of any such dens in real life, and develop the idea that bad habits often hold their victims so tightly that they can not break away from them.

Instance cigarette smoking as one such habit. Ask each pupil to count up the boys and men he knows who smoke cigarettes or use tobacco in some form, having them give the number without mentioning any names.

Then ask the class how many people they know who used to smoke but have now given it up. They may be able to think of a few such persons, but not many. The tracks of the tobacco user all lead the other way,—towards this habit, not away from it.

Why is it that this is true?

To answer this question we must know what there is about tobacco that makes it so hard for a person to give it up after he has once begun its use, and how it hurts his body and mind.

COMPOSITION OF TOBACCO

Let the class tell what they know about the making of cigarettes and other forms of tobacco found on the market. Then have them turn to the index in their physiologies and show them how to find from it what their text-books say on the subject. Call on different ones to read aloud all that is to be found in this way.

In this grade it is not necessary or wise to call attention to all the minor ingredients sometimes found in the tobacco of commerce. It is enough for the class to know that the harm in its use is chiefly due to the nicotine it contains, to the adulterations sometimes present, especially in the cheaper grades of tobacco, and to the smoke and impure air which are taken into the lungs while smoking.

Bring out each of these points fully and clearly, showing just why tobacco is harmful to the user for each of these reasons, and often to others as well who may be near him.

After learning from their books that nicotine is a powerful narcotic poison, help the pupils to find out what a narcotic is, and why nicotine comes under this head. The dictionary and other books of reference which the library may contain should be freely consulted for this purpose, under the guidance of the teacher.

Make sure also that all have a clear idea of what is meant by a poison. Let the pupils define the term as well as they can, then write on the board for them the statement that a poison is any substance whose nature it is, after being absorbed into the blood, to injure or destroy the body.

Call for the names of some of the most common poisons. Tell the class that while some are more harmful than others all are dangerous except in the hands of a skillful physician or chemist. Pure nicotine is one of the most powerful poisons.

Why is it, then, that some people smoke or chew and yet do not seem to be harmed by the nicotine in tobacco?

Let any one in the class who can do so offer an explanation. Then tell them there are several ways of accounting for this fact.

In the first place there is very little nicotine in each cigar or cigarette. If the smoker stopped there he might not feel any serious effects, but few people do stop. They use more and more tobacco after once beginning its use, until by the time they begin to feel injured by it the habit has so strong a hold upon them they can not shake it off.

Another reason is that the repeated use of tobacco in any form may so dull the brain and nerves that the user does not realize the harm it is really doing until it is too late to repair the damage.

Other people do not begin to use tobacco until they are already strong, healthy men. Such persons will not be so likely to be injured by it as if they had begun to smoke or chew when they were boys. But there is nothing in tobacco to help any one. On the other hand, every one who uses it will sooner or later have to suffer the consequences.

Appoint a class committee to find how the ordinary cigarette is made, and what goes into it. What is the reason it can be sold at such a low price? Why is its cheapness alone proof that it is not fit to be put into the mouth?

Almost all cigarette smokers form the habit of inhaling the smoke. Bring out two ways in which this practice is especially harmful.

Explain that everybody needs to breathe pure air all the time in order to keep well and strong. The tobacco inhaler takes impure and poisoned air into his lungs, instead of the oxygen he needs, so he is doubly harmed.

EFFECTS OF SMOKING ON GROWTH AND HEALTH

Ask each pupil to write a short description of the kind of man or woman he or she would like to be when grown up.

Have these descriptions read aloud, then copy on the board the characteristics which appear in the majority of the papers.

Probably nearly all of the class will agree in wanting to be tall, healthy, good looking, rich, and successful in whatever business they undertake. How can they make good their desire?

Take time for a short discussion of each of these characteristics, and of what each boy and girl can do towards acquiring it.

Turn to the physiologies and help the class to find what young people can do to help growth, to keep well, to get and keep a clear, fresh complexion, and to acquire a graceful walk and carriage.

Consult other books on hygiene which may be in the library or be otherwise available for the same purpose, showing the pupils how to find from the index of the book or the chapter headings the different topics they wish. Have the best paragraphs read aloud, and let the pupils give the substance of others in their own words.

When they understand that these good things do not come by chance or good luck, but by real effort on the part of those who desire them, bring out the fact that boys and girls can also



The home staff of Scientific Temperance Workers
Miss Stoddard, Mrs. Transeau, Mrs. Hunt, Miss Gurney, Miss Mirick, Miss Grant

shut away from themselves every one of these advantages by living the wrong kind of lives.

Refer the class again to their physiologies to find what these have to say as to the effect of cigarette smoking on growth, health and personal appearance.

Let them find how it affects the heart, the brain and nerves, the skin, the eyes, and other organs of the body. Most boys who have ever tried to smoke know, without being told, how it upsets the stomach.

Write down the name of each part of the body that may suffer from the effects of cigarette or tobacco smoking. Then let the class try to find some part or organ that is benefited, or at least not injured, by the use of tobacco. Which list is the longer? What does this show as to the wisdom or folly of forming the cigarette habit?

EFFECTS OF SMOKING ON WORKING ABILITY

If a boy or girl wants to go into any kind of business and succeed, it is necessary to have some kind of a recommendation to start with. What kind of a recommendation does the cigarette smoker have?

Most employers nowadays ask to see the fingers of boys who ask for work. What is the reason? What is the result if they find a boy's hands stained and yellowed by cigarettes? If they notice that he is thin and undersized and nervous, with the odor of tobacco in his clothes?

Why is it that a cigarette smoker is likely to be the last person trusted with money or any important piece of work in an office? Why do people often disbelieve what he says, even when he speaks the truth?

If the class can not answer these questions and others which will suggest themselves in this connection, have them turn to their books and there find how the use of cigarettes weakens brain power and muscle power, and how it makes wrong doing easy and right doing hard.

Every one in the class has seen a race of some

kind and has taken part in some contest of swiftness or skill. Ask how they would prepare for a running or skating match or any similar test. Why not wear tight shoes or a heavy overcoat at such times? Why not try to carry as much as possible in each hand?

The folly of any such handicap can be seen at once. Why is it any less foolish to weigh one's self down with the tobacco habit which is always a hindrance in every kind of an undertaking?

Do not be afraid to admit that many successful people do smoke in spite of these things. But call attention to the fact that few if any began the use of tobacco while they were boys.

Explain also that they have been successful in spite of the tobacco habit, and not because of it. If they have done well while carrying

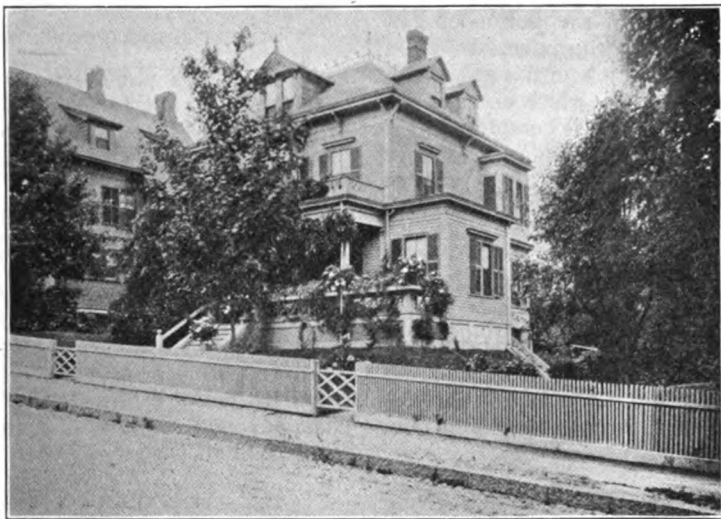
such a weight, how much better would they have succeeded without it! Ask the pupils in your class how many of them think they would be able to hold their own against others in business who are free from such habits. Is there one who would be willing to take the risk?

Speak of others, like

General Grant, and the late Emperor of Germany, whose lives of usefulness were cut short by the use of tobacco. Nobody who begins to smoke or chew knows how susceptible he will be to the poison he is thus taking into his body, or how long he will be able to keep his health and strength afterwards. It is too big a risk to run to make the attempt.

In the forts that protect the frontier of a country, there are always soldiers on guard to give notice of the approach of a possible enemy. It is just as important, on a smaller scale, for each person to guard the approaches to his own body and protect it from every enemy which would harm or destroy it.

We must set this guard, find out what our enemies are, and keep so vigilant a watch that they will never pass the fortifications and enter the citadel.



Headquarters of Scientific Temperance Instruction, 28 Trull St., Boston, Mass.

AUTHORITATIVE QUOTATIONS

EFFECTS OF NICOTINE

Nicotine is the most active element in tobacco. Its immediate effect is to lower the circulation, quicken the respiration, and excite the muscular system; its final effect to cause general relaxation. In "tobacco heart" the heart's action becomes irregular and irritable, and the walls are hypertrophied or thickened. There is no cure without stopping the tobacco. The tendency to increase the amount of tobacco is irresistible.—F. M. CRANDALL, in *How to Keep Well*.

THE POISONOUS ELEMENTS IN TOBACCO

It is well known that nicotine is a powerfully poisonous element in tobacco leaf. But too little attention seems to have been paid to the relatively large quantity of the poisonous gas, carbon monoxide, in tobacco smoke.

When the insidious nature of this gas, which is precisely the same as that which exists in the fumes of burning charcoal, is considered, it is not improbable that the poisonous symptoms which are apt to follow are due to a very large extent to the carbon monoxide in the smoke.—*London Lancet*.

TOBACCO A HINDRENCE TO ATHLETIC DEVELOPMENT

Among life insurance and athletic training men there is but one course, total abstinence. And among our men there is nothing that will throw a man down and out more quickly than the use of liquor or tobacco.—E. HITCHCOCK, *Amherst College*.

I have found, in my experience that young men are better off, and do better work without alcoholic stimulants than with them, and they are, therefore, absolutely prohibited in our training.—CHAS. E. COURTNEY of *Cornell University*.

It is absolutely necessary for a college or school athlete who is striving to win a place on any team to have endurance, especially is this true in rowing and football. This can be accomplished to the greatest degree only by abstaining from the use of tobacco and alcoholic drinks while in training.—M. F. MCBRIDE, *Capt. of the Yale Football Team of 1899*.

The use of any kind of alcoholic spirits or of tobacco is absolutely forbidden to athletes in training for any athletic event in Stanford University. Those who violate this rule are dropped from the teams. This rule is not one made by the faculty, but by the students themselves, under the advice of their coaches. It is found

that any amount of alcoholic drink or the smoking of a single cigar will prevent a man from doing his best in football or other games. About six years ago it was the belief of one of our coaches that the use of ale would help the men in training for football. This beverage is used in England for the purpose of giving a man energy and strength. The result in the two years in which ale was used was very discouraging. The teams in both cases "slumped" that is, fell short of their ordinary power of work.

It has become in this and other institutions a matter of honor for every student becoming a member of an athletic team to keep training rules for several weeks before the great events and it has now become a student tradition that to break these rules is a moral delinquency.—DAVID S. JORDAN, *Leland Stanford University*.

EFFECTS OF TOBACCO-USING ON CHARACTER

Tobacco does not spare the morals. The tobacco-user is apt to manifest a selfish disregard of the courtesies due to others. He brings to the presence of others a repulsive breath, and clothing tainted with offensive odors. He poisons the atmosphere that others must inhale, and disputes their right to breathe a pure, untainted air. The free use of tobacco by young people dulls the acuteness of the moral sense, often leads to prevarication and deceit in the indulgence, and is apt to draw one downward to bad associates. It is not the speed but the direction that tells on the future character and destiny of young men.—A. F. BLAISDELL, M. D.

THE SELFISHNESS OF TOBACCO-USING

Most smokers seem to forget that the air is public property. Even on the streets there are many occasions when it is not possible for a man to smoke without having the smoke carried directly to the nostrils of those to whom it is both offensive and injurious. The habit of chewing is almost invariably offensive to sensitive persons, and the indulgence of the habit in public is an infringement on the rights of others.

Perhaps Robinson Crusoe might have been excused for using tobacco, having no one to save money for, no unfortunates to aid, no children to educate, no one to whom he might set a bad example, no one whose breath of air he could contaminate, no one to smell his breath, no one to see the offensive results. But a man living in the society of so many to whom this habit is so offensive, ought seriously to ask himself *whether he is doing right* to continue such a practise.—B. P. COLTON, A. M.

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INTERMEDIATE—The Body's need of a Framework. The Respiratory System of the Body.

ADVANCED—Bones and Joints. The Process of Circulation. The Process of Nutrition.

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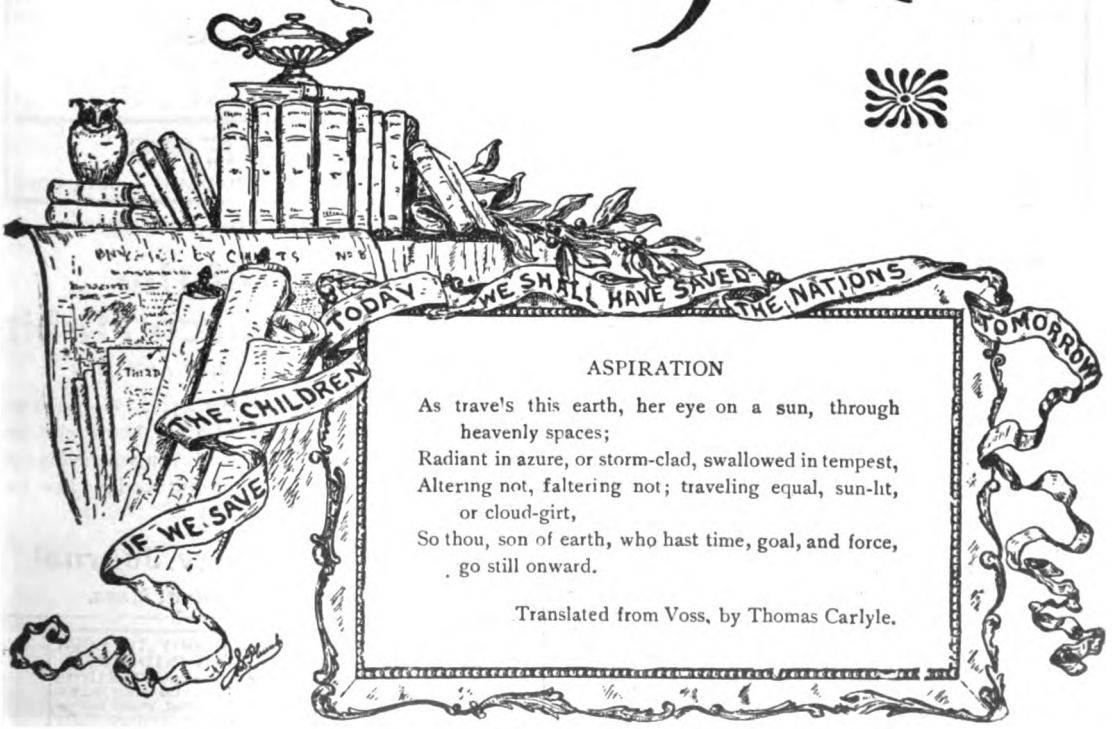
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THE SCHOOL PHYSIOLOGY JOURNAL



ASPIRATION

As travel's this earth, her eye on a sun, through
heavenly spaces;
Radiant in azure, or storm-clad, swallowed in tempest,
Altering not, faltering not; traveling equal, sun-lit,
or cloud-girt,
So thou, son of earth, who hast time, goal, and force,
go still onward.

Translated from Voss, by Thomas Carlyle.

PUBLISHED AT
BOSTON, MASS.
MARY H. HUNT, EDITOR

VOL. XIV. NO. 6
FEBRUARY, 1905

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School Physiology Journal

Vol. XIV

BOSTON, FEBRUARY, 1905

No. 6

LOVE OF COUNTRY

"**H**OW shall we train our Prince? To love
his land,
Love justice, and love honor. For them
both,
He girds himself and serves her, nothing loath,
Although against a host in arms he stands.

"Ruling himself the world he may command.
Taught to serve her in honor and in truth,
Baby and boy and in his lusty youth
He finds archangels' help on either hand.

"The best the world can teach him he shall know,
The best his land can teach him he shall see,
And trace the footsteps where his fathers trod ;
See all her beauty that the world can show,
And how it is that freedom makes men free,
And how such freemen love to serve their God."

VOTERS' INFORMATION BUREAU

BY MARY H. HUNT

A NATION'S most valuable assets are the
character and efficiency of its people.

Wealth of soil, climate, or mines—
sources of strength to a sober, upright people—
only facilitate the decay of a degenerate popu-
lation.

Babylon, Carthage, Greece, and Rome went
down, not for lack of wealth but for lack of
character. Character is the involuntary ex-
pression of individual habits, thought, wishes,
and purposes. Aggregation of character in
individual utterance and action expresses itself
in public opinion. Any nation, most of all a
republic, ignores public opinion at its peril. If
such opinion is wrong, the only redress is edu-
cation that will correct the error back of such
wrong opinion and change action.

GREAT EDUCATIVE FORCES

The great forces that educate opinion and
thus make character are the home, the church,
and the school. In America with her mixed
population made up of peoples of many national-
ities, the school through its teaching of tem-
perance physiology has led the home and even
the church on the alcohol question.

It is twenty-three years since the first tem-
perance education law was enacted in this
country. For the last ten or fifteen years
nearly all our schools have been teaching this
subject, many of them fairly well.

GROWTH OF TEMPERANCE SENTIMENT

What effect is this study having on public
opinion? Are there enough people intelligently
opposed to the use and sale of alcoholic drinks
to undertake a hand to hand campaign of edu-
cation of the voters on this subject?

These questions have been constantly in
mind as I have looked into the faces of large
audiences, probably 200,000 representative
people in all, during the eighteen months' lecture
campaign just closed in many states, east, west,
north, and south.

The growth of temperance sentiment as com-
pared with that of ten years ago when I was
last in those states was so apparent that I dared
to say

*The child is born who will see the last legalized
brewery, distillery, and saloon go from America,
if we now do our part.*

THE DUTY OF THE HOUR

That part is the securing of more thorough
study of temperance physiology, especially in
the lower grades of our public schools, and the
adoption of the line of work laid out by the
Voters' Information Bureau. This Bureau
represents the logical application to the saloon
question of the total abstinence sentiment or
public opinion against alcohol already resulting
from public school scientific temperance in-
struction. The entire scheme of the Voters'
Information Bureau is outlined below that the
teacher may understand that he or she is doing
foundation work in the great movement destined
to rid our land from the tyranny of alcohol.
The most patriotic statesman can only appeal
to and focalize existing public opinion against
alcohol, humanity's worst foe. The teacher who
is faithfully teaching temperance physiology is
making that sentiment.

In more than two-thirds of the states com-
prising our nation, the question of whether or
not the sale of alcoholic drinks shall be per-
mitted in each locality is submitted to the voters
of that locality. Thus the right education of
the voter who may have left school before
scientific temperance, which is now a compulsory
study, became a part of the school curriculum
is manifestly of great importance.

WORKING TO THE VOTING LIST

The Woman's Christian Temperance Union
of Ohio has adopted as a definite line of work
for the ensuing year this plan of taking directly
to every voter during the year before election

the physiological and scientific reasons for abstinence and no saloons. The executive committee of the National Anti-Saloon League enthusiastically recommends this work as a line of action. In Texas, Illinois, Nebraska and Iowa it finds favor, as it can not fail to do with every sincere advocate of intelligent sobriety. The *American Issue* says of this plan:

"There are 22,000,000 children of school age in this country, and when the boys become of age they should be instructed as to their voting privileges. The Woman's Christian Temperance Union and the Anti-Saloon League are endeavoring to focalize the growing temperance sentiment against the saloon which will mean its death. The child is born who will see the last saloon closed. How old he will be is a difficult question to answer, but he is here.

PLAN OF WORK

"The Voters' Information Bureau plans to have a Christian man, who votes for principle and for men rather than party, to work on five doubtful voters and try to convert them to political regeneration. This work should begin twelve months before election. Each single force by itself is powerless to do effective work against the saloon, but by a union of such forces the saloon is doomed."

THE OBJECT SOUGHT

The object of the Voter's Information Bureau is to convey to every voter the information that proves alcoholic drinks to be physically, mentally, morally, and financially injurious, a menace to character, to achieving ability, a peril to this government of the people, and that therefore such drinks ought to be neither manufactured nor sold.

METHODS FOR SECURING THIS OBJECT

First—Personal work in conveying to each individual voter the truths that prove alcohol to be by nature an outlaw that should be banished from human habits and traffic.

Second—To this end every local union should appoint a superintendent of this department to carry out in her own community the following suggested plans:

(a) The local superintendent should secure a list of the voters of her county, where the vote is taken by counties, or of the town, town-ship, borough, city, or ward if her city has ward option.

(b) By inquiry the superintendent should find concerning each voter on the list whether or not he voted *no* on the question of license and for temperance men on the school board, or whether he should be classed as doubtful on those questions.

(c) Divide the voters into three classes: first, the temperance and no-license voter; second, the doubtful; and third, the license voters.

(d) Secure an organization of representatives from all temperance and Christian workers in the community into an executive committee, with a chairman, secretary, treasurer and literary committee.

(e) Divide the license and the doubtful voters into groups of five.

(f) Secure for each of these groups of five a worker from the allied temperance and Christian people of the city, town, or township.

(g) It shall be the duty of this worker tactfully to convey to each of the doubtful and opposition voters in his or her group, reliable information concerning the evils following the use and sale of alcoholic drinks.

(h) The methods recommended for conveying this information are: personal work with each member of the group of five; calling attention to articles in the local press and elsewhere containing the latest truths of science, told in simple language, and showing the evil nature and effects of alcoholic drinks and the consequent wrong of legalizing their sale.

(i) To aid these workers in their efforts to change the opinions of voters a series of facts on the following and other related subjects in printed form is prepared for this department. Viz: First the truth about beer. Second—Why fermented liquors are different from the fruits and grains from which they are made. Third—The truth about wines. Fourth—The truth about cider, whiskey and other distilled drinks. Fifth—The alcoholic appetite. Sixth—The hereditary effects of alcohol. Seventh—The financial aspects of the subject. Eighth—Why it is wrong to license the sale of alcoholic drinks. Ninth—Why temperance men and women should be elected as members of school boards.

(j) There shall be a literature committee of this department which shall consist of the director of the Bureau of Scientific Temperance Investigation of the National Woman's Christian Temperance Union, and the national state superintendents of this department assisted by representatives of the state organizations co-operating in this work.

(k) It shall be the duty of this literature committee to originate, select and pass upon the literature to be used in the Voter's Information Bureau. This should be non-partisan in character, and consist of short pithy extracts printed in good sized type. This literature committee may be increased in the states by the addition of state officers of organizations represented.

(l) Each of these Christian and temperance workers who are to undertake this educational work should be asked to contribute to the treasury as nearly one dollar each as they can spare or collect for this purpose to pay for the literature and other expenses of the campaign.

(m) The treasurer shall receive, disburse and render an account of the funds thus or otherwise collected for the purpose of this department.

(n) This campaign of education should begin as nearly as possible twelve months before the local elections that are to decide whether or not saloons shall be licensed, elect officers who are to enforce the no-license law, and choose the local boards of education who are intrusted with the duty of selecting the text-books and courses of instruction in temperance physiology, which is a legally required progressive study for the pupils in all public schools.

(o) The executive committee of this Information Bureau should, long before the caucuses are held, seek for, select and work diligently for thenomination, and later for the election of persons to fill the offices mentioned in the preceding section.

(p) This executive committee should appoint persons to watch the registration lists as soon as they are open, to be sure that no voter who can be counted on to vote right forgets to register in time to become a qualified voter. The committee should also be represented at the polls by persons who will watch the voting, and with carriages or otherwise bring delayed voters to the voting places.

(q) This executive committee shall hold monthly meetings to note progress, to fill vacancies where workers for any cause fall out, and for consultation as to other needs of the work committed to them.

An exchange of groups, or of individuals in those groups, among the workers during the year may often be of advantage. Great care should be exercised that every voter is reached by this educational method.

(r) If the saloon is driven out of a community one year it may reappear after the next election, unless this systematic work of education of all the voters is continued.

(s) The saloon with its disastrous consequences exists to-day by the will of a majority of the voters. This majority believes, not in drunkenness, but in a moderate use of what the saloon has to sell. The saloon can only be exterminated when a controlling majority of the voters are convinced that it is the nature of the most moderate use of alcohol to create the drunkard's uncontrollable appetite; and that the best interests of the individual, the community, business, and public affairs demand the abolition of the saloon.

Therefore every motive that can influence a loyal American appeals for co-operation in continued and persistent activity in this endeavor so to educate all voters on these topics that this menace to the life of the nation — the saloon — will be abolished.



"How shall we train our Prince? To love his land,
Love justice, and love honor."

As the National Bureau of Education reports the average limit of school attendance in the United States to be a little less than five years of two hundred school days each, it is self-evident that a majority of the coming citizens of this country, its future law-making power, are in the first five grades or years of our public schools. Hence any attempt to take the study of temperance physiology from any of the lower grades (years), or text books on this subject from pupils who have books in other subjects, should be opposed to the utmost.

A love of fair play is one of the inherent attributes of childhood, and the teacher who fails to recognize this does violence to the child's nature. To win the boy is often a much greater victory than to solve the problem, and nothing short of fair play will do this.—*Ohio Educational Monthly*.



Primary Lessons

FIRST TO
THIRD YEARS

THE FLAG

WHEN the Grand Army of the Republic met last summer in Boston, the most striking feature of the entertainment provided for the veterans was an immense living flag made up of boys and girls dressed in red, white, and blue.

Tears filled the eyes of many an old soldier as he filed past the flesh and blood counterpart of that flag he had often periled his life to save. And as the great chorus of song burst from that multitude of youthful lips, voicing the same love for God, and home, and native land, heads were bared in reverent gratitude that children today are being taught the loyalty and patriotism that their fathers knew.

February is pre-eminently the month to teach love of country. In the upper grades, our two great national heroes whose birthdays are close at hand may be studied in the light of what they did for the United States, the difficulties they overcame, and the lessons that are in their lives for us who must carry on the work they so well began.

For little children, we may best approach the subject of patriotism through the flag with its spectacular appeal to the child's love of color and form and motion.

If there are foreign children in these primary classes, and there are few American schools today that do not number more nationalities than one, give some time and place to the flags of all countries thus represented. Display the flags themselves if these can be had; if not, outline each on the blackboard or on large sheets of manila paper, using colored chalk. The proper design and colors to be used will be found in any unabridged dictionary.

Show what these flags stand for in color and design. In many cases this can be done most tellingly by stories, illustrated if possible.

Tell something of what each flag means to those who live in the country to which it belongs.

Explain why every one loves his own flag best, just as he does his own home.

If we went to another country to visit, we should belong under the same flag that we do now, because the United States would still be our country.

But if we went to some other country to live, the flag of that country would become our flag, and it would be our duty to love and serve it just as if we had been born under it.

So our American flag belongs to all the people who have come to this country to live and make their homes here. It is their country and their flag just as much as ours, even if they were born in some other land and we were born here.

Our flag stands for the country that takes care of us all and protects us, whether we are big or little, or rich or poor; but it stands also for the loyal service that each one of us in return owes to the country.

(1)

THE FLAGS WE STAND FOR

Find how many of the children in your class were born in some other country. Set apart ten minutes a day for a talk on the flags thus represented until each has been taken up.

Begin with the flag of the country from which the largest number of children have come.

If this country is Italy, hold up an Italian flag. Give it to one of these children to hold and let the others gather about him.

Why is this flag Tony's and Beppo's and Angela's any more than it is ours?

What country does it stand for? Where is Italy?

Let the Italian children name the colors in this flag and point to each. Some of them may know what these colors stand for. If so, give them a chance to tell about it.

If no one can do this, give such brief explanation as may be found in books on Italy and its flag in the school library, or be otherwise available, adapting language and story to the age and comprehension of the children.

When we see this flag on a house, what does it tell us about the people who live there?

We know they are Italians, or else they have put out the Italian flag because they want to show their love and respect for some one who has come from Italy.

Another day, talk about the German flag in similar fashion.

Then take up in class the Russian or British or Spanish flag, until each child coming from another country has had a chance to see his own flag displayed and to tell something about it.

(2)

THE AMERICAN FLAG

After the flags of all foreign countries represented in your class have been shown and discussed, hold up the American flag.

Whose flag is this? What country does it stand for? How many of us have a right to hold it? Why does it belong to all of us?

When we see this flag floating over a house or any public building, what does it tell us?

How many colors are there in this flag? Where is the white? the red? the blue?

How many stars in our flag? In what part of the flag are they? How many red stripes? How many white stripes? In what part of the flag are the stripes?

A short flag drill may close the first talk on the American flag at this point, or the children may simply march about the room, each carrying a small flag.

Another day, tell briefly and simply the story of how America got her flag.

When the first white people came to this country to live, they brought the flags of their own lands with them. They came from many different lands, so in some parts of our country there were English flags, in other parts French flags, and in others Dutch and Spanish and Swedish flags.

When we began to be a nation by ourselves, we needed to have a flag of our own to represent the new country.

This first flag was not just like the flags we have today. It had just the same red and white stripes as now, but instead of the stars in the upper left hand corner, there were three crosses, one red and two white ones.

This was not a real American flag, because the crosses were the same as those in the British flag.

Washington was the leader of our country at

that time, and it is thought he got the idea for our flag from the stars and stripes in the coat of arms of his family.

The first real American flag was made in Philadelphia, by Betsy Ross.

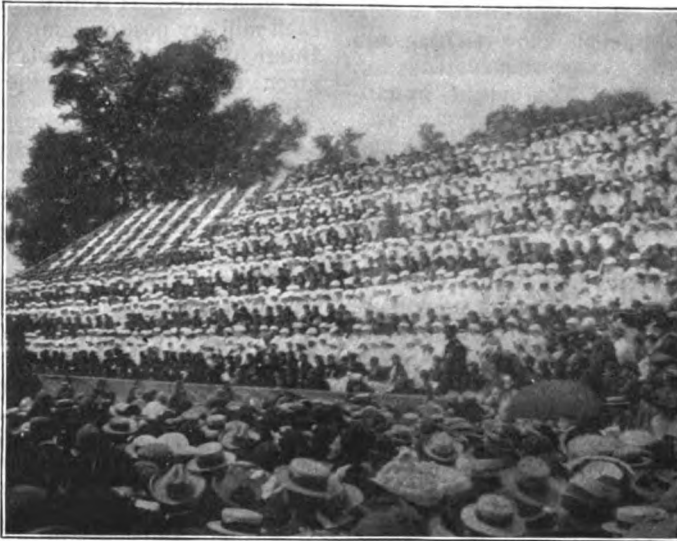
Show the children a picture of the house in which this first flag was made.

Betsy Ross showed Washington how to cut out the stars for the flag. She made all the flags for the country as long as she lived and was able to work.

All the best American flags nowadays are made in the Brooklyn navy yard. They are made of the very stoutest bunting to last a long time, and not fade or tear in the sun and wind.

(3)

THE MEANING OF THE FLAG



“Keep thou well thy colors,” quoth Freedom to the land,
And ‘gainst a world of evil thy sons and thou shall stand.”

Every part of our flag means something. That is one reason why we love it so well.

Count the stars in our flag. How many are there? What does each star stand for?

There were only thirteen stars in the first American flag. These stood for the thirteen states that then made up the

United States.

Now our country stretches from the Atlantic Ocean to the Pacific Ocean, and there are forty-five states, so we have forty-five stars in the flag, one for each state.

How many red stripes in our flag? How many white ones? What do these stripes in our flag stand for? Why are there always just thirteen stripes in our flag?

How many colors in our flag? What does each color mean?

Write on the board the names of the colors in the American flag, and opposite each that which it stands for,—red for bravery, white for purity, blue for truth.

If our flag stands for all these things, we

must stand for them too, or it will not be right for us to carry the flag.

What does it mean to be brave? to be pure? to be true? How can we be brave on the playground? in the schoolroom? Tell something brave that you have seen or know about.

One way of keeping ourselves pure like the white in our flag, is to keep from swearing and using bad words. Another way is to say and do only what we are not ashamed to have other people hear and see.

We are true, like the blue in our flag, when we keep our word, and when everybody can trust us.

Our flag stands for our whole country. It means that every one can go where he likes and do what he likes, and as long as he does what is right the country will protect him and give him a fair chance.

All over the world people know our flag and respect it because they know what it stands for, and because they know it takes care of its citizens.

It would not be fair to have our country and our flag do all this for us and do nothing in return.

Perhaps you think you are not big enough or old enough to do anything for the United States, but that is a mistake.

Our country needs the help of its boys and girls quite as much as they need its protection.

Our country needs good people and wise people and able people to carry on all its different kinds of work and be its rulers, and it will have to get them from the boys and girls who are now in school.

Every young person who does his work well now, and learns his lessons, and is brave and pure and true, is getting ready to be the kind of man or woman our country wants.

Every one who does poor work in school or at home, or who is idle and cowardly and not to be depended upon, is getting ready to be a drag on the country instead of a help.

Which kind do you want to be?

Every time we see the flag it should remind us of what we should do for it and the country it stands for, as well as of what it does for us.

FLAG SALUTE

The flag is displayed at the teacher's desk. The piano, or bugle, or bell, strikes a quick note; every scholar rises and turns his face toward the flag, hands at the side; another note is sounded; every scholar gives the flag the military salute,—right hand lifted, palm outward, to a line with the forehead and close to it.

Standing thus, all begin to repeat together: "I pledge allegiance to my flag and the repub-

lic for which it stands: one nation indivisible, with liberty and justice for all."

At the words, "to my flag," the right hand is extended gracefully, palm upward, toward the flag, and remains in this gesture till the end of the affirmation: whereupon all hands immediately drop to the side. Then, still standing, as the instrument strikes a chord, all begin at once some patriotic song.—FRANCIS BELLAMY.

SALUTING THE FLAG

Saluting the flag means showing it respect. It is "wishing health," as the Latin word signifies. Flag salutes are fired only between sunrise and sunset (never on Sundays), and require the National flag to be displayed. Never is the flag of a military post dipped for a compliment or salute. The National salute gives one gun for each state. It is fired July 4, at noon, at each military post or camp with artillery. The International salute consists of twenty-one guns given to the flag of another nation.—*Educational Independent*.

THE MISSION OF THE FLAG

BY EDITH H. KINNEY

THE last bell rings, and in they pour
Like nations through our country's door.

Stand here and watch them as they pass,
While I present to you the class!

These days of pedagogics, ripe,
We teachers learn to seek the type.

First comes young Timothy, the keen,
Whose patron saint doth claim the green.

Next Gretchen, with her flaxen hair,
And quaintly stolid German air.

SmaM Levi, who will not disdain
The crudest bargain, fraught with gain.

Antonio, whose dusky eyes
Seem ardent as Italian skies.

Petite Corinne, with piquant face,
Fair France in her unconscious grace.

Yet from each eye, or dark or blue,
A patriot's eye looks out at you.

And mark how true their voices ring
When of the Stars and Stripes they sing!

O, whisper not of race or clan
To our staunch young American.

That flag above us in the sun
Hath merged the many into one.

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HENRIETTA AMELIA MIRICK, Assistant Editor

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"He fails who climbs to power and place
Up the pathway of disgrace.
He fails not who makes truth his cause.
Nor bends to win the crowd's applause."

A CAMPAIGN OF EDUCATION

AN exchange says:

"At the meeting of the American Wine-Growers' Association in New York City there were representatives of interests aggregating \$100,000,000 One of the officers of the association announced:

"We expect to begin a campaign of education. Our own people do not know as much about their own domestic wines as they should, and besides they have not yet learned how to drink wines,—that is, to drink light wines every day at meals, as millions of people do in Italy, France, and other European countries. The consumption of wines in this country should be three or four times what it is today, which is only half a gallon per capita per annum. In Italy and France it is more than thirty-four gallons per person. We believe that a campaign of wine education would result in greater temperance, and be productive of social reform."

Why not produce non-alcoholic wine, not by the addition of chemicals, but by so sealing the boiling grape juice from the air as to prevent fermentation and the production of alcohol which is the dangerous property of wine? The history of the result of wine-drinking in Europe is the story of individual and national decay. In two provinces alone of wine-drinking France, the amount of crime has doubled in the last thirty years, suicide in the last half century has more than quadrupled, and the physique of the men is degenerating at the same time.

If we would not have the conditions of physical, mental, and moral degeneracy reproduced in our country that have followed wine-drinking in France, Italy and other countries of Europe, this Wine Association's campaign of education must be met with another, reaching all the peo-

ple, and showing that there is no safety in drinking wine either with or without meals, because of the power of the alcohol in wine to create the uncontrollable appetite for more. Scientific temperance instruction in the schools and the Voters' Information Bureau are powerful factors in such enlightenment of the people.

TEMPERANCE AND HYGIENE TEACHING IN SCHOOLS

IN a recent issue of the London *Standard*, Lady Falmouth writes:

"During a visit to United States of America last autumn, so greatly was I impressed by the sobriety of the American people and the total absence of the poor drink-sodden beings that are, alas, too frequently seen in England, no matter what town one is passing through, that I felt obliged to try to discover if there was not a cause for this sobriety. I could not well imagine, with the very mixed population of the United States, that this could all be due to home influence or religious teaching.

"On inquiring of the Director of the Massachusetts Educational Exhibit at the World's Fair in St. Louis whether the children of the public schools received any teaching in hygiene and temperance, he informed me that they did, and referred me to the publishers, Messrs. Ginn & Co., and the American Book Company, who very courteously sent me all the authorized text-books used in the public schools to instruct the children in the different grades of physiology. These text-books have all been passed and signed by the Advisory Board for the United States, and some of them have been in use more than twenty years.

"On my return to England, I heard that some months ago an influential body of medical men presented a petition to the Board of Education, asking that hygiene and temperance should be placed among the compulsory subjects of education, and that the matter is under consideration.

"No doubt it will remain under consideration for some time to come, unless we, as a nation, demand this instruction for the children of our primary schools. Those of us who realize that 'correct action is dependent upon correct thinking' recognize that 'this study must be begun in those early school years in which the habits of life are formed,' since 'the desired object of this study of physiology is to teach young folks to understand thoroughly the simple laws of life in order to apply them intelligently to their daily living.

"When one is politely told by a casual acquaintance in America that the drink question is a very serious one in England, one does not

like to hear it, true though it be ; it hurts to feel that this evidently makes such a strong impression on the strangers who visit our country.

"Surely, if we endeavor to teach the young in our schools the fundamental truths of physiology which includes hygiene, the proper uses of alcohol, tobacco, etc., we shall at least feel that we have not left the rising generation in ignorance of what is before it, but have equipped it for its struggle through life. Through these means also, we shall have done something towards tackling this big question by implanting certain truths in the minds of the majority of our children.

"America, with all the vigor of a young, free nation, considers it wise to bring up her youth prepared for the life before them. Can not we, the old country, do likewise? Let us not forget that the young folk of this country are said to have greater difficulties to contend against, such as a damp, raw climate, and an unhealthy environment which often aggravates hereditary tendencies. It behooves us, therefore, all the more to train up the child in the way he should go, rather than leave him to take his chance, since the child is the father of the man.

"To sum up : This elementary teaching of physiology that is so needed by the young of our nation is what is now given in our Colonies, also in Sweden, Denmark, Holland, etc., besides the United States, and is merely what the rate-payers have a right to demand and expect."

Lady Falmouth's letter was immediately followed by a similar appeal from Sir W. H. Broadbent, one of the committee of physicians petitioning for universal compulsory teaching of hygiene and temperance in British elementary schools.

He says :

"The question opened by Lady Falmouth as a result of her visit to the United States is one of great importance. She was struck by the greater apparent sobriety of the working classes there, as compared with what she had observed in different parts of this country, and on inquiry was led to attribute the superiority of the American workingman in this respect to the teaching of hygiene and temperance in the elementary schools.

"It is possible that her ladyship may have overrated the effects of education in producing the general sobriety of the working classes in America, and that the restrictions with which the sale of alcoholic drinks is surrounded may contribute to this. The fact remains, however, that in England, an inordinate proportion of men's wages is expended on beer and spirits, partly under the fatally mistaken idea that

stimulants are necessary and helpful, but mainly as mere self-indulgence and in ignorance of the injurious effects. What is spent on drink is withdrawn from the fund which ought to provide food, clothing, warmth and comfort for the wife and children.

"With this there is absolute ignorance of the nutritive value of different kinds of food, of economical methods of preparing it, of rendering it appetizing and digestible by appropriate cooking, and of hygiene generally. If temperance and hygiene are to be learnt, the only way is to teach them at school. The medical profession has long recognized this, and, as Lady Falmouth says, a petition was signed by more than fifteen thousand medical men in favor of such teaching being made obligatory in all schools, and a deputation waited upon Lord Londonderry to present it. The representations then made were favorably received by Lord Londonderry, who expressed his entire sympathy with the object of the memorialists.

"Since that time a scheme has been worked out by a committee for introducing teaching in temperance and hygiene into the school curriculum without adding to the hours of work (one lesson a week only being necessary), and without serious interference with other subjects, and a schedule of topics has been drawn up suited to the intelligence of children of different ages from seven to fourteen. This schedule has been sent to all the important educational authorities, now no longer School Boards, but Departments of County Councils, and is engaging the attention of most of them. Only one flat refusal to consider the question has been received so far as I know. Edinburgh, to the honor of her authorities, was in advance of the medical profession, and had already a plan for such teaching in operation.

"The direct benefit of instruction on the preservation of health can not fail to be very great, but there will be other indirect advantages. It will be more genuine education, in the true sense of the word, than much of what is taught in elementary schools. Object lessons are proverbially the best for awakening interest and training the faculty of observation, and for the first steps also of reason. The children will have themselves, their food and clothing, and games as object lessons, and every item of information will be both useful and interesting.

"Lady Falmouth says that the rate payers have a right to demand and expect the elementary teaching of hygiene which is given in Sweden, Denmark, the United States and our Colonies. But will they demand it? It is the apathy and ignorance of the general public which make reform so slow and difficult. A sensational or sentimental appeal will have a spasmodic suc-

cess in drawing money from those who give for the gratification or relief of their own feelings, while sustained efforts for the betterment of the poorer classes meet with little encouragement. It is proposed to provide school children with free meals at the expense of the rate-payers, thus destroying the wholesome principle of parental responsibility, and liberating more of the wages for self-indulgence, while doing away with any encouragement, or even opportunity, to learn the proper preparation of food in the home.

"It remains to be seen whether the attempt to strike at the root of the ignorance, from which springs so much physical, mental, and moral deterioration, will receive the support which will enable Lord Londonderry, of whose good will we are assured, to press the teaching of hygiene and temperance on the bodies charged with the education of the children."

THE IDEAL CITY

BY CHARLES M. SHELDON

WHAT makes a city great and strong?

Not architecture's graceful strength,
Not factories' extended length,
But men who see the civic wrong,
And give their lives to make it right,
And turn its darkness into light.



"Dear little Cupid stops in on his way
With missives of love on St. Valentine's day."

What makes a city full of power?

Not wealth's display nor titled fame,
Not fashion's loudly boasted claim
But women rich in virtue's dower,
Whose homes, though humble, still are great,
Because of service to the State.

What makes a city men can love?

Not things that charm the outward sense,
Not gross display of opulence,
But right, that wrong can not remove,
And truth, that faces civic fraud,
And smites it in the name of God.

This is a city that shall stand,
A Light upon a nation's hill;
A Voice that evil can not still,

A source of blessing to the land;
Its strength, not brick, nor stone, nor wood,
But Justice, Love, and Brotherhood.

"Still through our paltry stir and strife
Glow down the wished Ideal,
And Longing moulds in clay what Life
Carves in the marble real.

"To let the new life in we know
Desire must ope the portal;

Perhaps the longing to
be so
Helps make the soul im-
mortal."

Tommy: "Grandpa, do you remember Daniel Webster?"

Grandpa: "O, yes, my child, I remember him very distinctly."

A pause.

"Grandpa, you are a good deal older than I am, aren't you?"

"Yes, indeed."

"How much older must I grow to remember George Washington?"—
Texas Siftings.

The one tremendous fact about universal suffrage is the imposition of a special duty—a duty that does not end with the individual's vote, but which demands all his available energy in the preservation of the State.

Universal suffrage requires the single voter to be not only a good citizen in the intelligence and conscientiousness of his ballot, but a good citizen militant; he must by precept and example spread abroad the principles of honest government. Those who are not with us are against us. In the effort to rescue American cities, or to keep them rescued from corruption, every honest man must lend a hand the year round.—*The Century.*

What sculpture is to the block of marble, education is to the human soul.—ADDISON.



Grammar Lessons

INTERMEDIATE WORK

FAIR PLAY

A LITTLE more than a year ago, when foreign immigration to this country was at flood tide, a representative of one of the leading New York dailies made a careful study of the motives which are bringing these multitudes to our shores.

In almost every case the answer was the same in substance, however crudely expressed. Each one wanted a better chance for himself or for his children than he could have at home, and for the sake of this chance he was willing to suffer any temporary discomfort that might be necessary.

President Roosevelt's declaration that it is the purpose of this government to deal fairly and squarely with every man, whatever his occupation or social standing or nationality, but expresses anew what America has stood for from the beginning,—an equal chance for all.

No two persons ever have made or ever will make the same use of the same opportunities, and no government can enable them to do so. But all must have the chance to do as well as they can for themselves, and it is the mission of the school and of other educative influences to increase self-activity and self-help while at the same time teaching due regard for the rights of others.

Children are natural lovers of fair play, and are quick to see and disapprove of cheating whether on the playground or elsewhere. It is entirely in the power of the school to foster and develop this instinctive feeling that injustice and political corruption shall be equally abhorrent to them after they have reached manhood and womanhood.

RIGHTS OF THE INDIVIDUAL

The child who oversteps the rights of others seldom has a clear idea of what his own rights really are. Give him this knowledge, and his instinctive love of fair play will almost surely

lead him to accord the same privileges to others that he in turn claims from them.

Explain what a right is, then put on the blackboard the question, What are our own rights? asking each one in the class to bring as full an answer as he can to the next recitation. Such answers may be written out beforehand to be read aloud in class by the pupils, or handed to the teacher to examine and make selections for reading.

While some in the class will not know what their own rights are, others will claim as such what manifestly belong to some one else. The class talk which follows the reading of the various answers should clear up both these points and help to prevent such mistakes in future.

Read the preamble to the Declaration of Independence and announce that this will be taken as the referee in case any dispute arises as to what one's rights really are.

What is the first individual right here named? What are the things one needs to keep him alive?

What is the second individual right named in the preamble? What is meant by liberty?

Have one or all in the class look up the word in the dictionary and find the meaning that applies in this case. Does it always mean permission to do just as one pleases? Why not?

Let the pupils tell some of the ways in which they have liberty at home, in school, in other places. In what ways are they deprived of liberty in each of these cases? When is this right and fair?

Tell the pupils that people who live with others can never do exactly as they please. They can have liberty for themselves only as this does not interfere with the rights of any one else, because in a country like ours everybody is entitled to an equal chance.

What is the third individual right stated in the preamble? What are some of the things that make us happy? We have a right to all such things, if they are really good for us, and if they do not interfere with the happiness of any one else.

Some boys think they get happiness from smoking cigarettes; but even if they do, they have no right to such happiness because it would almost surely be gained at the expense of their own health, if not the happiness of their mothers and friends.

Some girls think they get happiness from eating candy whenever they like, but this too is a form of happiness it is not always right for them to have. Why not?

Ask the class to give examples of happiness to which each of us has a right, and also instances of so-called happiness to which for some good reason we have no right.

THE RIGHTS OF OTHERS

We have found that in our country at least, nobody has any right to take unfair advantage of others because here all have equal rights. We have learned what some of our own rights are, now we must think about those of other people.

What are some of the rights of your play-mates? of your teachers? your parents? of old people? of little children? of strangers?

After the class are able to answer such questions as these, and understand in some degree why everybody else has rights as well as themselves, explain how it is that the rights of others sometimes depend on us and the way in which we behave toward them.

For example, those who are with us have a right to be happy, but if we are cross or unkind or selfish they will be made unhappy instead. What are some of the things we can do in order that those about us may enjoy this right that belongs to them?

Name other things which we must refrain from doing, because these would interfere with the rights of some one else. How does impoliteness trespass upon the rights of people? How does cruelty? anger? envy? hate? dishonesty? untruthfulness? cheating?

Sometimes we hear a smoker say that he has a perfect right to use tobacco if he wants to, because he is hurting no one but himself. Is this true? Why has no one a right to injure himself?

Let the class name again some of the ways in which the tobacco user interferes with his own rights. Then tell how he deprives others of rights which belong to them,—the people in his own home, and those he meets on the street and in public places, all of whom must breathe over again the air he has polluted with tobacco smoke.

Show how the same thing may be true of one who begins to drink wine, or beer, or any liquor that has alcohol in it. No one has the right to injure his own health or ability, or to wreck the lives of others, and no one can tell beforehand whether he will seem to escape these consequences, or whether the same fate will be his that has overtaken thousands of others who likewise thought they could take alcoholic drinks or let them alone as they chose.

Nobody has the right to take such a risk on his own account, or for the sake of others.

THE RIGHTS OF THE STATE

It is very natural to think of our country, just as we are apt to do of our parents, as existing for our benefit, to take care of us and protect us, give us schools and roads and all kinds of public improvements. But the State has rights of its own, just as parents have rights which belong to them.

Think what we mean when we speak of our country. Do we mean only its great plains and mountains, and lakes and rivers? Or the wealth of its farms, and factories, and mines? Or do we mean even more the people who have developed all these splendid resources and have made it a prosperous land instead of the wilderness it was at first?

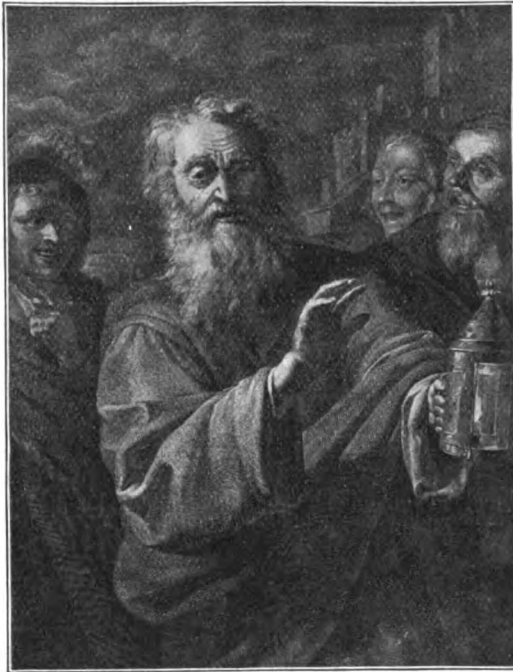
Whenever we speak of the rights of the

State, then, we mean our own rights and the rights of all other citizens of this country taken together, or the rights of society.

We expect the State to take care of us. To do this it must have money, so every citizen must pay his part of the taxes. If he does not do this he is cheating the State just that much of one of its rights.

The State must have officers to make laws for the safety and welfare of all, officers to see that these laws are obeyed, and officers to decide who and what is right in case any dispute arises between citizens.

Many of these officers are elected directly by the citizens of the State, and others are elected by them through representatives whom they



"For what are you looking?"
"For an honest man."

have previously elected. If every citizen who can do so does not go to the polls and vote, he is cheating the State out of another of its rights, that of faithful service.

The State has a right to expect honesty and integrity in those who are its rulers. The old philosopher, Diogenes, wandered about the streets of Corinth with a lighted lantern in the daytime looking for an honest man.* People laughed at the spectacle, but the search is still going on. The State flashes the light of publicity on every man and woman in its service, testing each to see if it can find honesty and faithfulness to duty. Whenever it is successful in the quest, it rewards the trustworthy citizen by a call to higher service.

DUTIES OF THE GOOD CITIZEN

The good citizen should know the laws and institutions of his town; should pay his taxes cheerfully, promptly, and completely; should attend caucuses and help steer good men in and bad men out of candidacies; if sought for an office he should accept it however humble.

He should speak out when things go wrong. He should adorn his home with flowers and shrubs, keep his paths shoveled and sanded when icy.—G. STANLEY HALL.

We glory in our American civilization because, more than in any other country on the face of the earth, men may here rise, give scope to hope, foster ambitions and aspirations, and encourage all rational expectations.

Garfield said that our American life differs from European and Asiatic civilization in this, that they, like the strata of the earth, lie in layers that are comparatively fixed and impenetrable, whereas American civilization is like the water of the sea—the drop that touches the sandy bottom today may sparkle from the crest of the topmost wave tomorrow.

He who is today at the bottom of society may, under the encouragement of our republican institutions and freedom, rise until he occupies the highest position that the people can bestow.—BISHOP FOSTER.

MAKING CITIZENS

From the common school of the country district to the highest university in the land, the fundamental idea of American education is to make American citizens.

There is no thought of making soldiers or officeholders or merchants or traders or inventors: make citizens first, then let each young American choose for himself the line of life he deems best suited to his capacity.

After all, the best method of judging of any system of education is in its results, and without saying a word in disparagement of the people of any other nation, it may be said that in every essential quality the American citizen has demonstrated the efficiency of his training.—*St. Louis Globe Democrat.*

THE FUTURE CONQUERORS

BY JESSIE FORSYTH

Hear the soft patter of little feet,
Keeping their step in the march of time;
List to the voices of childhood sweet
Singing the songs of our cause sublime.
Steady each footfall, though light and free,
Faltering not as they onward press;
Cheering the strains of the melody,
Telling of peace and of righteousness.

Gaze with a vision divinely lent,
Promise of good in the future trace;
These shall arise when our day is spent,
Women and men of a nobler race.
All we have missed is their heritage,
All we have failed of is their's to win;
Their's the new era, the golden age,
Their's is the conquest of wrong and sin.

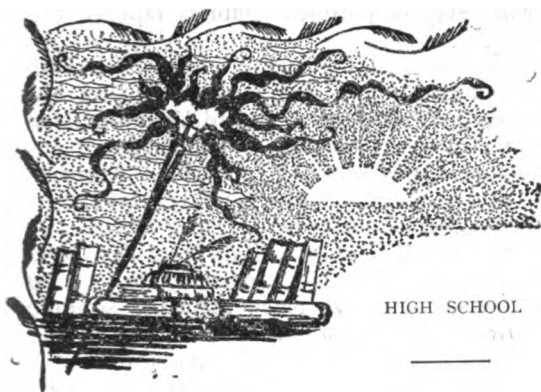
We will not envy their brighter day,
So that to them time the victory brings;
For not ignoble the part we play.
We are kingmakers if they are kings.
Smooth then the way for the little feet,
Teach the right note to each fresh young voice.
Throw wide the portals, their coming greet,
And in their triumph to be, rejoice.

To prepare us for complete living is the function which education has to discharge; and the only rational mode of judging of any educational course is to judge in what degree it discharges such functions—HERBERT SPENCER.

A child should feel, as he enters the school-room, "I shall be pointed towards the highest and best." Education does not consist in teaching people to know what they do not know; it means teaching them to behave as they do not behave.—RUSKIN.

We can not help rejoicing in the increasing prominence of the idea that every being whom the world contains has his true place written in the very make of his nature, and that to find that place and make him fit to fill it is the duty of his educators in all their various regards.—PHILLIPS BROOKS.

*See illustration on page 91



OUR RULERS

PEOPLE can be found even yet who think that citizens are born, not made, and that they first enter upon the rights and privileges of this estate at twenty-one.

The real student of popular government makes no such mistake. He knows that true citizenship is as much the result of growth as are manhood and womanhood. It needs the same fostering care and the same opportunity to develop by actual practice.

In Chicago not long since, an eight year old child was found scrubbing the fence in her back yard. She had found out in her civics class at school that one of the duties of a good citizen is to keep his city clean, and she was at work on her part.

It is not too soon to begin with the earliest years of the school course to develop an interest in public affairs. Our future rulers are here before us waiting for their first lessons in statecraft, and it is in our power to determine the character of their rule. Lack of training has made politics unclean in the past. Knowledge of the rights and duties of citizenship, and actual participation in the government of the school and the home will develop a different order of rulers in the State to whom public office will indeed be a public trust.

With advanced pupils it is well to make at first a general study of

THE COUNTRY THEY ARE TO GOVERN

Start with a comparison of governments. What is the difference between the way this country is ruled and Russia, Japan, England, France, Turkey, and the South American republics? The time which can be given to such study will necessarily determine the thoroughness with which this topic can be taken up. For the object sought it is not needful to go into fine details, but rather to gain a general idea of the characteristic features of government in

these different countries and find how each differs from that of the United States.

Bring out the best features in each and also the worst. Which, if any, could be adopted here with advantage? Which would not work so well here as in the country in which it is found? Give reasons.

Call attention to the co-ordinate division of power in this country among the executive, legislative, and judicial branches. Outline the most important duties of each. Distinguish between the government of one of our states and that of the nation as a whole. How is your own ward, city, town, or county governed? How do you think its government could be improved? What could you do as a voting citizen to improve it? What can you do now towards this end?

THE CHARACTER OF ITS RULERS

If we were to select the rulers for our country, what are the qualifications we should want them to have? Put on the board the names of three or four of the best world rulers and ask the class to mention the qualities in each which made him a successful ruler.

In the first place they will find that each of them knew what his duties were, and in the second place that he had fitted himself to perform them honestly and unselfishly.

Every citizen in the United States, even the humblest, can do the same. What does he need to know? Everything that belongs to the public service, or as much of it as he can. Like the little Chicago girl, we can all keep our own homes clean. This leads to study of the best ways of disposing of waste; to pure drinking water and pure foods and how to get them; to clean streets and beautiful surroundings.

How can he fit himself to rule wisely in this land where all have a chance to rule? He does not need to acquire a new set of virtues. They are the same for the individual and for the citizen. The boy and girl who have learned how to rule themselves in the home and the school will be equally successful as rulers of men in the world outside.

WASHINGTON'S BIRTHDAY

'Tis splendid to live so grandly,
That long after you are gone,
The things you did are remembered,
And recounted under the sun;
To live so bravely and purely,
That a nation stops on its way,
And once a year with banner and drum,
Keeps its thoughts of your natal day.

—Margaret Sangster.

GREAT BRITAIN JOINS HANDS WITH AMERICA

IN PROVIDING FOR A SOUND NATIONAL PHYSIQUE

NEVER was there a plan proposed for the enlightenment or betterment of humanity which somebody did not oppose. If the plan is unwise, it perishes at the hands of such opposition. If, on the contrary, it is a real progress that meets a need, opposition by the futility of its arguments only furthers its advance.

This is markedly illustrated in the case of the compulsory public school study of the physiological reasons for obeying the laws of health, including those relating to abstinence from alcoholic drinks and other narcotics. Disinterested opposition to teaching every child how and why he should take such care of his body, in which he must live as long as he stays in this world, that he may lead a happy and useful life can only be accounted for by the existence of born obstructionists. Nevertheless, the compulsory study of this subject in the schools of every state in this country has gone steadily on until its results, in the increased sobriety, strength, and efficiency of the American people, have attracted the attention of students of social and national problems in other nations, and these are now urgently recommending that the American system of education in hygiene and temperance be extended to their own countries.

In 1903, public attention in England was called to popular ignorance of the laws of health and the nature and effects of alcoholic drinks and other narcotics as a cause of the evils of intemperance. Then came the report of the Royal Commission of Inquiry concerning the causes of degeneracy, which said :

"The Committee believe that more may be done to check the degeneration resulting from drink by bringing home to men and women the fatal effects of alcohol on physical efficiency, than by expatiating on the moral wickedness of drinking." As a result, a committee was formed, in 1904, of thirty one leading British physicians, including presidents of Royal Colleges and the president of the British Medical Association, which framed and issued a petition for the compulsory public school study of hygiene and temperance. This was signed by upwards of 15,000 physicians, practically the entire medical profession of England, Scotland, Ireland and Wales.

A London paper says of this petition, "The response was very striking. Eight thousand signatures were received by return of post and had to be conveyed to the receiving office by a

special staff of postmen. Others rapidly followed."

Thus equipped, this body of experts, Sir William Broadbent, chairman, representing the medical profession of the United Kingdom, began the study of the different methods of instruction in this subject employed in America and other countries. November 25, 1904, they issued a circular entitled "*Suggested Courses of Teaching in Hygiene and Temperance for Boys and Girls in the Public Elementary Schools of the United Kingdom*, based upon the scheme prepared by Mrs. Mary H. Hunt for use in the schools of the United States of America."

These suggested Courses of Teaching for the public schools of the United Kingdom are in reality our American Course of Study in physiology and hygiene for primary and grammar grades almost verbatim.

The action of the committee was widely approved. The *Manchester (Eng.) Guardian* of Nov. 29, said :

"The specimen Syllabus is based on a scheme drawn up for use in the United States schools, and is full of sound learning and splendid common sense. When one sees the proposed teaching set out under the several heads and graduated according to the age of the pupils, the knowledge seems so absolutely indispensable that one wonders how it has escaped being taught so long."

Sir W. H. Broadbent, M. D., F. R. S., stated in behalf of the British Medical Committee, in the letter to Education Committees accompanying the Course of Study: "We desire to urge respectfully that the disastrous effects produced by alcohol on the nation require that the subject of temperance be given a prominent position in any syllabus of teaching in hygiene and elementary physiology."

Sir Victor Horsley, F. R. S., F. R. C. S., said at a London public meeting, Nov. 2, 1904: "We ask only that the laws of health coupled with the subject of temperance should be regarded as on all fours with a subject like history, and if there is to be a reorganization of the time table it could be perfectly well done by teaching a little less history."

"We do not want any indirect treatment of this subject, for that is not the way to approach one of the great subjects of the nation."

"The medical profession has adopted in very large measure the American system and is united on this line, namely, that there must be this teaching, that every child ought to receive it, and therefore that it must be of the nature of compulsory teaching."

The committee which has done this great service for British schools is composed of some

of the most eminent scholars and investigators of the English speaking world. Among them are Sir Thomas Barlow, Sir Lauder Brunton, Sir Victor Horsley, Sir William Macewen, Sir Henry Thompson, Professor G. Sims Woodhead, and others as distinguished. They have selected the same topics that our Course of Study calls for, and have specified that the study must be a progressive branch beginning with the lowest grades, and must be taught with text-books in the hands of pupils able to read, as we also specify.

Such action should silence those superficial critics who are not familiar enough with the subject to know that the great truths concerning alcoholic drinks and other narcotics which are being taught the children of America are the verities of science, and should remind them that the spoken word escapes while the written word abides, and that as the printed page helps to fasten truth in the mind it is therefore necessary in this study for children who are able to read.

Great Britain is utilizing for the production of a sound-bodied, imperial race these great essentials which have already been wrought out in America with splendid results.

Dispensing it,—in wise benevolence,—
Until, from all the sorrow-stricken earth,
Instead of tears, ascends the final song!

—ERNEST NEAL LYON

THE NEW DECLARATION OF INDEPENDENCE

Many readers of the JOURNAL are aware that the leading article of our January issue bearing the above title was presented as a Demonstration Exercise at the last annual meeting of the National Woman's Christian Temperance Union, held in Philadelphia, Pa.

The success of this Exercise was marked, surpassing even that of the Flag Demonstration given at Portland two years ago. So great has been the demand for its reproduction elsewhere, that the Department of Scientific Temperance

has issued the program in leaflet form and is prepared to send it with the loan of the stereopticon slides and also the Flag Exercise at the low price of \$1.00 and express charges, which will necessarily vary somewhat with the distance.



"Tis splendid to live so grandly, that long after you are gone,
The things you did are remembered, and recounted under the sun."

The two exercises furnish ample material for a complete evening's entertainment, and one of the most unique and enjoyable kind. It is hoped that unions as well as schools will make large use of this program to show the public what is being done by Scientific Temperance for the country and the world, and to give them glimpses of the headquarters of this movement and the workers there employed.

THE DESTINY OF THE REPUBLIC

Ah! not in placid arrogance of Pride,
Nor armaments and soldiery of War,
Nor island-gems that sparkle on the sea,
Nor votive temples, beautiful with art,

But in the scholar's meditative mind,
The honest, rugged arms of laborers,
The destiny of our republic lies!
And so may we acquit ourselves as men,
Full worthy of our lofty heritage!

Conserving it in its integrity,
Unstained by enormities of kings;

THE OBJECT AND AIM OF EDUCATION

No true and permanent fame can be founded except in labors which promote the happiness of mankind.—CHARLES SUMNER.

Education is leading human minds and souls to what is right and best and making what is best out of them; these both go together.—RUSKIN.

BOOK NOTICES

SONGS OF THE FLAG AND NATION, By Walter Howe Jones. Hinds, Noble & Eldredge, New York.

There is place in every schoolroom for a book of patriotic songs, set to good music that is not too ambitious in character, but such as boys and girls will love to sing. In certain respects, "Songs of the Flag and Nation" is one of the best collections we have seen. It contains much new material, the result in part of a prize competition inaugurated by the publishers, and many old favorites. There are selections for special holidays, and a goodly number of solos and part songs. Typography and press work are clear and attractive, and the book is a convenient size to handle.

THE ART OF RIGHT LIVING, By Ellen H. Richards. 50 cents net. Whitcomb & Barrows, Boston.

Never was there a time when conditions of living made it harder to retain health, strength and efficiency than now. But, fortunately, helps to right living and knowledge of how this is to be had and maintained have increased proportionately fast. With every child in the public schools learning, as is now possible, the elements of hygiene and temperance, there is good reason to believe that the physique of the nation will ultimately keep pace with its material and intellectual progress. Mrs. Richard's little book deals with such practical topics as Food, Sleep, Exercise, Work and Amusements, and is a helpful contribution to the already long list of books that teach how to live.

FIRST LESSONS IN FOOD AND DIET, By Ellen H. Richards. 30 cents net. Whitcomb & Barrows, Boston.

The class that follows out the directions given in this book can hardly fail to get a clear idea of what food does for us, the principal sources from which it is derived, and the best ways of preparing it for the table. Emphasis is laid on the use of simple foods and such as may be provided at a low cost. A number of typical menus are included. A valuable feature of the book is that the child is told what not to eat as well as what to choose as food, and given convincing reasons for avoiding unwholesome substances. A good index and titles for all the chapters would make the book still more available for use.

RATIONAL HOME GYMNASTICS, By Hartvig Nissen. \$1.00. E. H. Bacon & Co., Boston.

While the exercises prescribed in this book are

primarily for invalids or those in delicate health, there are few healthy persons who would not find the different limb and body movements useful. The directions are beautifully clear in themselves, besides being copiously illustrated from excellent photographs. Many health points are included, and the "why and how" have not been forgotten. The official positions held by the author in Harvard, Johns Hopkins, and elsewhere as director of physical training give him the right to speak with authority and add weight to his statements.

THE BODY BEAUTIFUL, By Nannette Magruder Pratt. The Baker & Taylor Co., New York.

An eminently practical and highly interesting little book. One can see between the lines on almost every page the enthusiastic and engaging personality of the writer. Her *naïveté* is almost childlike at times, but is after all rather winning. The book contains numerous very practical and sensible diet lists, rules and directions for home exercises adapted to specific purposes, and is well worth spending a little time on, in spite of its absurd lack of literary finish and logical arrangement. It is amply illustrated by fine half-tones.

HOW TO CARE FOR THE HAIR AT ALL TIMES, By Juliet Marion Lee. Price \$1.00. J. M. Lee Co., New York.

Miss Lee's ideas on hair culture which she elaborates in her book are certainly in line with modern notions of health, hygiene, and physical culture. The book contains some practical advice for home care of the hair in winter, at the seashore, and under certain diseased conditions. She explains and reiterates that perfect cleanliness and exercise (massage) are as essential to the health of the scalp as to the body in general.

PHYSIOLOGY TOPICS FOR FEBRUARY

PRIMARY—Parts of the body used in Play and Work: Arms, Hands, Fingers. Sense of Touch. The Skin and Cleanliness. How the Body is Controlled: Brain and Nerves.

INTERMEDIATE—Needs of the Body. Why not Alcoholic drinks? The Body's need of a Muscular System. The Excretory System of the Body.

ADVANCED—Body Training and Care. The Process of Respiration. Fermentation. Bacteria. Narcotics.

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With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

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The illustrations are a marked feature of this book, including both mechanical diagrams and attractive pictures designed to interest the pupil. Special attention is called to the simple comparisons of the bodies of human beings and of the lower animals. The object of this comparative study is to impress upon the mind of the pupil the unity of nature and to cultivate in him a love and sympathy for the lower animals.

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Oral Lesson Book in Hygiene For Primary Teachers. By Henrietta Amelia Mirick, A. B., Assistant Editor School Physiology Journal.

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THE SCHOOL PHYSIOLOGY JOURNAL



PHYSIOLOGY CHARTS No. 8

THE CHILDREN

IF WE SAVE

WE SHALL HAVE SAVED THE NATIONS

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VOL. XIV. NO. 7
MARCH, 1905

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School Physiology Journal

Vol. XIV

BOSTON, MARCH, 1905

No. 7

INSPIRATION

OPEN the door, let in the sun ;
He hath a smile for every one :
He hath made of the raindrops gold
and gems,
He may change our tears to diadems—
Open the door !

Open the door of the soul ; let in
Strong, pure thoughts which will banish sin :
They will grow and bloom with a grace divine,
And their fruit shall be sweeter than that of the
vine—
Open the door !

Open the door of the heart ; let in
Sympathy sweet for stranger and kin :
It will make the halls of the heart so fair
That angels may enter unaware—
Open the door !

—*British Weekly.*

THE PASSING OF ALCOHOL

BY MARY H. HUNT

A CRISIS like the fall of the Roman Empire, the Reformation in Germany under Luther, the American Revolution, the Revolution in France, or our own Civil War bursts upon a nation changing all its future. The casual on-looker is bewildered at the unexpected that seems unaccountable. But the student who looks deeper sees that such crises are the inevitable result of causes that have long been at work, and that the ensuing outbreak could no more be prevented than the water of Niagara Falls could be suspended half way between the rocky brink over which it plunges and the abyss below.

GREAT MOVEMENTS IN HISTORY

The student of the philosophy of history sees running through the story of the ages a force in the affairs of men that makes for righteousness, and that is ever at work limiting the progress of evil. That force is the fact that sin against God and man manifested in the myriad forms of organized selfishness is self-destructive. In that fact lies the hope of the world.

When the people of a nation have sunk beyond the possibility of restoration, as had old Rome, some besom of destruction coming in the natural order of things, as did the Huns, Goths and Vandals, sweeps the degenerates off the pages of history. If it is the governing classes of church or state who are corrupt while

the people long for better things, a God-taught Luther shakes the world and dethrones base hierarchies with the heaven-sent truth that man is justified by faith in God's promised forgiveness to the penitent, not by the paying of penance.

The men and women of the Mayflower braved the wilds of an unknown continent for the sake of civil as well as religious liberty.

It was inevitable that their descendants should teach the world that government exists for the people, and that a day of reckoning is sure to come for the power that reverses this fundamental principle by demanding that the people shall exist for government.

The French Revolution is the story of a people gone mad with suffering and destroying their rulers because these demanded that a starving, ragged nation should pay the bills of sumptuously fed royalty, robed in purple and fine linen.

Our Civil War was the revolt of the Christian and moral sense of this nation against human chattel slavery. Slavery stood doomed before that force in the affairs of men which makes for righteousness between man and man, irrespective of complexion. That war had to come. The civilization of that time had not produced a Hague Tribunal. Slavery had to go. Its time was up on the calendar of the centuries and only by force, as society existed at that time, could it be abolished, and even thus not until "every drop of blood drawn by the lash had been expiated by one drawn by the sword, and every dollar of unrequited toil of the bondman had been matched by others taken from the national treasury to protect the life of the nation."

THE SLAVERY OF ALCOHOL

From all this shall we learn no lesson concerning the slavery of alcohol? The victims that it has done to death outnumber those of war, famine, and pestilence.

The sufferers from this trinity of evil resist their bondage, and escape as quickly as they can from the prisonhouses of war, hunger, and disease. But the slaves of alcohol love and cling to their enslaver. The harder the bondage, the closer the sot cleaves to his bottle and to the man that will fill it for him again.

The strength and defenses of a nation are not so much its armies and navies as the character of its men and women. Famine and pestilence, and perhaps war, may not injure character, this priceless possession of a people. But so malign is the effect of alcohol, and to such

an extent does it stultify and degrade physical, mental, and moral ability, while stimulating the worst human passions, that Dr. B. W. Richardson, after an exhaustive study of its nature and effects, exclaimed, "Alcohol is Satan in solution."

THE DRUNKARD'S WIFE

Think of having to live with a man under the permanent influence of "Satan in solution", not for a day or a year, but of being inexorably tied to him for long years, while you see his character, once your ideal of manly excellence, grow more and more degraded, and you and yours become the victims of his brutal selfishness that sacrifices every obligation to his passion for drink, day after day and year after year, till death releases you or sends him to a grave of shame. Such is the horrible fate of the drunkard's wife, an unwritten tragedy, the thousandth part of which can never be told.

If you would escape it, young ladies, say no, emphatically *no* to the young man who is not a total abstainer.

But Harry has a strong will and great self-control, you say. That may be, but the most fiendish thing about alcohol is its power when drunk, even in small quantities, to create an imperious craving for more, and to weaken the power of the will with which to resist that craving, and thus to destroy self-control.

To bank your future on the expectation that the young man you love will exercise self-control in the use of a substance whose nature it is to destroy self-control is to run an awful risk. Only by playing a game of chance with his life and yours, which is a dangerous experiment, can the limit of his power of resistance to alcohol be determined. When this limit is passed, there is nothing for you but the agony of a drunkard's wife and the mother of a drunkard's children.

THE SLAUGHTER OF THE INNOCENT

We shudder at the story of the Turks who try to exterminate the life of even unborn Armenians, but alcohol is infinitely more brutal. Every child has the right to be well born, the right to an inheritance of possible physical, mental, and moral achievement. Listen to the latest indictment against alcohol:

The organs of the human body are made up of cells too small to be seen except with the microscope. These cells are protected by a surrounding membrane. Alcohol is one of the very few substances that can penetrate these cell walls and come into direct contact with the protoplasm in the cell, shrinking and injuring it. The more complex and delicate the cell, the more easily it is invaded by alcohol. This

explains why the nerve cells first show the effects of alcoholic drinks, and also explains the results, as shown by Professor Hodge and Professor Demme, as to hereditary influence of alcohol.

Only 17 per cent of the progeny of a pair of alcoholized dogs was able to live, as compared with 90 per cent of the offspring from a normal pair under otherwise similar conditions, is Professor Hodge's report of his experiments.

Professor Demme, who compared the families of ten intemperate and ten temperate couples, found almost the same result. Of the children of normal parents 88 per cent lived, and of the children of alcoholized parents only 17 per cent lived.

His investigations tell only the number that were not able to survive. They tell nothing of the limitations, the defects of body, mind, and soul in all gradations from the submerged tenth in the slums to the nervous, aimless beings that did outlive the attack of alcohol upon their first existence. Concerning this, Dr. Forel, one of the greatest living scientists, says:

"Alcohol is an insidious poison having the power of insensibly causing degeneration of living tissue, deluding the brain while paralyzing its power, a process which is almost always accompanied by an agreeable feeling of narcosis. It is especially adapted to cause the gradual deterioration of the hereditary energies of the germ of the animal species. . . . It is not a case of the simple transmission to descendants of ancestral characteristics, nor of the new combination of the latter. No! It is an instance of a destructive agent coming from without to deteriorate a germ which in itself was good.

"But this element, when once a part of the hereditary mechanism, does not soon leave it. It perpetuates the defects which it engenders, according to circumstances, in several generations. These may be—the facts prove it—of a widely differing nature, and affect the most diverse organs. Such defects are: general feebleness, dwarfed stature, rachitis, epilepsy, idiocy, weak-mindedness, nervousness, monstrosities, etc.

"This is what constitutes alcoholic heredity, imperfectly understood and so incorrectly interpreted in general."

For any parent to entail upon children and children's children feebleness, stunted growth, rickety, epileptic, idiotic, weak-minded conditions or any form of monstrosity is an unspeakable crime against the children who must bear this awful burden as long as they stay in this life. Oh, the sin of it! the wrong of it! Herod slaying the innocent was nothing to this. And for what must they suffer thus? Only that a

father, perhaps a mother may enjoy the temporary agreeable feeling of narcosis which the alcoholic drink causes.

The feeble, stunted, rickety, epileptic, nervous, defective, idiotic population of any nation will be in proportion to the per capita consumption of alcoholic drinks consumed by that nation.

THE BREWER'S GAINS ARE THE REPUBLIC'S LOSS

The family is the unit in modern civilization. Alcohol, by debauching the man who should be the loving protector and breadwinner in the home, by breaking the heart of his wife, despoiling his children of their rightful inheritance of natural ability, beggaring them all, is the greatest enemy and destroyer of the home.

The hearthstone is the cornerstone of the American republic.

Who are profited by this consumption of alcoholic drinks that is making such havoc in our land? Only the men who make and sell these drinks, the brewer, the distiller, and the saloon-keeper.

One of their craft retorted to a judge about to sentence him for illegal selling: "You can't stop rum-selling. As long as there is an eight cent profit on a ten cent drink, men will sell and you can't help it."

Enormous profits on small investments are the charm in this business that calls only for a hardened conscience as equipment in this trade that takes the people's money and gives them in exchange, crime, poverty, misery, madness, and national peril by destroying character, our most valuable asset.

THE PEOPLE THE SOURCE OF POWER

Why are not the manufacture and sale of these drinks forbidden? A government of the people can not prohibit the manufacture and sale of beverages that the majority want to drink, because the people are the government, and the vote of the majority on a question submitted to them constitutes statutory law.

When a majority of the people do not believe in or want to drink alcoholic beverages, they

will prohibit their manufacture and sale. Assuming that a majority were not ready for the prohibition of their toddy, our national and most of our state governments have attempted by heavy taxation levied on the drink to cut down the profits on the trade, hoping thereby to restrict sale.

But it does not work that way. The victim of the craving for alcohol will have his booze no matter what it costs. Thus the trade has been able to pay the tax and still do business in the destruction of the people at a profit, while the government has become practically a partner in the liquor business by receiving a share in its profits in the form of taxes.

Such profit-sharing has a very stultifying effect on the popular conscience, although it has been conclusively proved that every dollar paid into the municipal, state, or national treasury on the sales of fermented or distilled liquor costs the people thirty dollars to take care of its consequences.

If, in private affairs, it cost a man thirty dollars to make one, you would say the sooner he closed up that business and saved the twenty-nine dollars he was losing the better would be his chance of escaping bankruptcy.

Do you ask how we could pay the many expenses of govern-

ment, if the millions paid in taxes on liquors and other narcotics should stop? If we shut up the breweries, distilleries, saloons, and cut off the trade in narcotics, we shall put thirty times as many millions into the people's pockets as this unholy traffic is putting into the federal treasury.

The financier does not know what he is talking about who whines over the loss to the federal treasury of this blood money. To be sure, we shall have to readjust our methods of raising revenue. But the people are ready for a change that will save them thirty good dollars for every blood-stained dollar they decline. Direct taxation could easily be borne by a people who were relieved of the expense of crime, pauperism, misery, and madness caused by alcohol and other narcotics.



Palace-Church, Wittenburg, Germany. The iron doors shown at the centre replace the wooden ones to which Luther nailed his ninety-five theses.

THE INDICTMENT AGAINST ALCOHOL

Here then, in brief, is our indictment against alcohol. It is a physical, mental and moral poison, not only to the drinker, but to his descendants. It is undermining the efficiency of the people from generation to generation in proportion to the amount taken, and in addition to this it is destroying the home, the bulwark of our civilization. Its boasted contributions to the public treasury cost the people thirty times more in money than these are worth, while its profit-sharing debauches the public conscience.

THE OLD WORLD DRINKER HERE

We saw in the case of old Rome that the besom of destruction was ready for a people sunk below recuperation. The descendants of those very Huns, Goths, and Vandals that destroyed Rome are now invading our country as emigrants from southern Europe.

One million came last year, four million in the ten preceding years, and still they come. As the wealth of old Rome invited the ravages of the predatory people of that time, so our vast resources, those of the richest nation of all time in all the world, are an invitation to all to come here, and they are coming.

In the largeness of our thought of liberty, we put the ballot into the hands of the men among these millions all too soon after they land on our shores, and thus invite them to help govern us. This ballot, if uninstructed, is destined to swell the majority for alcohol which will be the millstone hanged about the neck of this nation to drag it down into the hopeless sea of alcoholic corruption.

We have seen from history that in the fullness of time the people either rise and shake off destroying vices or are destroyed by them. The fullness of time when this government must abolish its drink system or be destroyed by it has certainly come.

The cup of iniquity that follows the use of alcoholic drinks is full to the brim and running over with ruined lives, crime, poverty, misery, madness, tears, broken hearts, and national perils from the invading millions who are bringing old-world drinking habits with them.

THE RESCUE

The force in the affairs of men that is making for righteousness has provided a way of escape from this peril. It is prevention through education, in the plastic period of childhood before an alcoholic appetite is formed; education that will reach all the children, teaching them with other laws of health the reasons for

total abstinence from alcoholic drinks and other narcotics.

Such education will pre-empt an overwhelming majority for intelligent sobriety. Such a majority will prohibit the manufacture and sale of this stuff which has been the blight of the last century. Will the people now recognize the peril and apply the remedy is the question on which the civilization of the twentieth century will turn.

The force in the affairs of men which makes for righteousness we call Providence. Note its beneficent provisions for this education. There was no unanswerable proof that total abstinence from alcoholic drinks is God's law in nature until science found within the last thirty years that men were mistaken in thinking moderate drinking safe, and that the scientific connection between the first glass and the drunkard's fate was not in the weakness of the drinker but in the nature of the drink to create an uncontrollable desire for more, a desire which no one can tell how long he may be able to resist. During this time science has further proved in the laboratories of the world that it is the inherent nature of alcohol to cause the awful havoc which follows in the wake of its use.

MEANS FOR SPREADING THIS TRUTH

Twenty-two years ago, when these facts had been proved, a marvelous movement began which has since spread over this entire country and is now extending to other lands. Our national Congress and the legislatures of every state have enacted laws requiring these truths about alcohol and other narcotics, together with the laws of health, to be taught the pupils in all the public schools of this entire country.

Through the thorough enforcement of these temperance education laws for all pupils, and especially for those in the lower grades, we can educate the immigrants in our midst through their children who attend our public schools. This is the only way to prevent their presence in our land from becoming like the destroying march of Attila the Hun.

Let me tell you how this is being done. New York State has a splendid temperance education law that requires at least three lessons per week for ten weeks of each school year below the second year in the high school, with a textbook adapted to grade in the hands of all pupils in grammar and high schools.

While in New York city, a city missionary asked me to go with her on her rounds through Five Points, one of the purlieus of that great city. Gladly accepting the invitation, we climbed to the highest rooms of a tenement house. There we found a Bulgarian, his wife, two big boys and a half grown girl intently lis-

tening to a boy who was reading aloud from a book on which rested one ray of departing sunlight.

Looking over the shoulder of the young reader I saw that his book was one of the illustrated temperance physiologies provided for fourth grade pupils in the school which the boy was attending.

As he translated the story of the injury of alcohol to working ability, the man answered in his own language which the missionary translated: "It is the way of the country. I ask railroad, factory, shop, anywhere, 'May I work?' The boss ask if I drink. I say 'Yes,' no work. I say 'No,' plenty work. It is the way of the country, drink, no work; no drink, much work. It good country."

The same thing is going on all over this land wherever these laws are thoroughly enforced.

BOOKS FOR PUPILS INDISPENSABLE

The brewers bitterly oppose text-books on this subject adapted to grade in the hands of pupils. Said a German scholar concerning the value of books by pupils as contrasted with oral instruction only, "The spoken word escapes, the written word abides." As we want these truths to abide in the minds of our coming Americans, we must insist upon books adapted to grade being put into the hands of all pupils able to read. The schools furnish three sources of information: the teacher whose words appeal to the ear; the child; the book which appeals to the eye, supplementing the teacher's words; observation or experimental work, guided by the teacher.

To withhold any one of these three sources of information in any study, and especially in this, is to limit the means for all-round education. The brewers know that a book which teaches the physiological reasons for total abstinence in the hands of every child who can read in the public schools will cut down the sales of beer. The more these sales are cut down, the greater the chance for the perpetuity of this

government of the people, which can never be stronger than that character which beer destroys.

If this republic endures, it is destined to show to the world the union of diverse races who have been taught in our schools to abhor alcoholic drinks, and who, in governing themselves as one great nation, have abolished the present legalized drink system as completely as human chattel slavery is now abolished.

This is coming, friends, but do not be cheated into delaying it by any specious arguments against books on this subject for pupils' use.

THE COMING MAJORITIES

God, the God of Nations, is calling every one of us to remember that he expects us quickly to educate the majority of the voters of this land to abhor alcohol, because such a majority is the only force in this land that can close the saloon.

It behooves us, then, to find in what grades of our schools we shall find this majority. Our National Bureau of Education tells us that the average public school attendance in this country is not quite five years of two hundred days each. This shows that the majority of our coming voters are now in the first five years of the public school, and that everything that can be done to teach them that alcohol and other narcotics are their

greatest enemies and the greatest enemies of the nation must be done during these years.

In the three primary grades the instruction must necessarily be oral. But the teacher must have an oral lesson book to teach from. Such a book is ready.

After these little people have had such oral lessons, there should be put into their hands, in the fourth school year, an interesting temperance physiology primer of forty lessons which they can easily understand and remember,—such a book as I saw the Bulgarian boy translating to the other members of his family in New York.

In the fifth and sixth school years these children will be able to comprehend a larger treat-



Interior of Palace-Church, showing Luther's tomb at right of font, Melancthon's tomb at left of font.

ment of the subject, and should have it in corresponding book form. One properly prepared book will meet the needs of both these years, the first half for the fifth year and the second half for the sixth. The same is true of the still more advanced physiology needed for the seventh and eighth school years.

These four books, if they are good books with a high school book for pupils of that grade, and good teachers will furnish ample equipment to set the next generation right on this question and give an overwhelming majority against that abomination of desolation, the American saloon.

CROCODILE TEARS

A recent issue of the *Brewer's Journal* says:

"Efforts are being made in some of the states to abolish or subject to reasonable control the instruction given to public school pupils as to the effects on the human body of alcoholic beverages. Public educators, in many conspicuous instances, are outspoken in their opposition to such instruction to children of tender years."

One is reminded of crocodile tears by this moving appeal that little children shall not have this teaching. They know as well as we that the coming majorities who will vote life or death to the beer business are in the lower grades of the public schools. Can we believe that their appeal is wholly disinterested?

What of their claim that public educators in many conspicuous instances are helping them?

A pitying attendant asked a man dying in a lodging house in London if he wanted anything.

"Yes, I want a friend," was the bitter reply of Benedict Arnold as his soul went to meet his Maker.

This country has had but one Benedict Arnold. I am slow to believe that there are to be recruits from the teaching profession to join that solitary man who tried to sell his country for gold.

PRESENT RESULTS

We are telling what will come of this teaching, but we can tell also what has already been accomplished. For more than twelve years this study has been well nigh universally compulsory in this country, teaching the injury alcohol does to working ability, and business now generally prohibits its use by employes.

The schools have been teaching that alcohol is a dangerous and seductive poison, and the per capita gain in the consumption of alcohol has dropped from seven and a fraction gallons to two and a fraction, in spite of our enormous importation of foreign drinkers.

The schools have been teaching the physiolog-

ical reasons for obeying other laws of health, and the average length of life has increased four and one-tenth years.

Are not these results contradicted by the liquor party? To be sure they are. They have so long said that prohibition does not prohibit, that of course they are now saying that education does not educate.

Have not opponents charged that the text-books are inaccurate? Oh, yes, but they did not prove their charges. Professor Atwater declared that the text-books ought to teach that alcohol is a food, but the scientific world laughs at the deduction drawn from his experiments on that point, which in reality proved that instead of being a food alcohol is a protoplasmic poison.

The costly experiments of the Committee of Fifty, which were expected to prove the teachings of the text-books inaccurate, conclusively proved them to be true, while the *Reply to the Committee of Fifty*, showing that their accusations were false, has been published as a government document.

He who said, "I am the Truth," is standing by his truth.

VICTORY NOT FAR OFF

The child is born who will see the last legalized saloon, brewery, and distillery go from our land, *if*, I have been accustomed to say, we enforce our temperance education laws. But I am now going to say without any if, the child is born who will see the last legalized saloon, brewery, and distillery go from the land *because* we are going to enforce these temperance education laws.

How old will be the child born this year when the last saloon goes? Will he be an old man? No, no! The truth concerning alcohol is out, we have the machinery for spreading it, and we are in the spreading business. "The truth shall make you free," is a sure promise of the God of Nations who has taught us to begin with the child in the command, "Train up the child."

How old will the child be? If we make as great progress in the next ten years as we have in the last a tremendous change for the better will be due by the time that child is ten years old. Send continuously a given set of truths into the homes of the land by the children, letting them go home day after day telling what they have learned on this subject, and a force is at work that can not be suppressed, but will manifest itself whenever a question arises requiring the application of these truths.

Just such a force is now at work in our land on the alcohol question, through scientific temperance instruction in the public schools, and even with our present imperfect teaching it is

making sentiment against alcohol with greater rapidity than we realize.

HOW TO HASTEN THE GLAD DAY

The truth can be brought directly to the voters in another way. Let us suppose that there are one thousand voters in a town which has local option on the alcohol question. Some of the voters among that one thousand are known to be temperance men. Others are uncertain. Others still, for various reasons, vote for license.

Divide these two classes of voters, the uncertain and the license men, into groups of five, and have each group under the tactful, unobtrusive care of a wisely selected temperance man or woman who will begin the work of personally educating each man in his or her group on this subject.

Begin the work as nearly as possible twelve months before election; not with arguments against license, but with the latest truths against drink and its effects on the health and prospects of the drinker, as well as the results of its use in the larger field of the family and the nation. Create first in the mind of the voter the intelligent abhorrence of all alcoholic drinks that the truth warrants, and you will have a sure foundation for a no-license vote.

Do you ask how this kind of educational work can be done? By the kind, neighborly methods known to tactful persons. Leaflets and newspaper articles should be freely used. There has never been so vast an amount of scientific truth as now, showing the inevitable havoc wrought by alcohol, and truth that has been put into such simple language that even the common laborer can understand it. The plainest, most unlettered voter in your town is entitled to all this truth that warns against alcohol, and it is your duty to see that he gets it. If he and others like him, home-born and foreign born, do get it, manhood suffrage on the alcohol question will prove a blessing and not a peril to our community.

Let all the temperance people in all the churches, the Christian Endeavor societies, Epworth Leagues, Woman's Christian Temperance Unions, Anti-Saloon Leagues, and other philanthropic and charitable organizations unite in this work, and as surely as God has so made the human mind that it responds to truth, so surely will enough of the uncertain voters and those who before were license men vote *No* to send the last saloon, brewery, and distillery from our towns and states. This can be done. If it can be done, it must be done, not in one community alone but in all, until the land is freed from the curse of alcohol.

Address, Oct. 19, 1904, before the State Convention of the Ohio Woman's Christian Temperance Union, held in Columbus.

IN EARLIEST SPRING

Tossing his mane of snow in wildest eddies and tangles,
Lion-like, March cometh in, hoarse, with tempestuous breath,
Through all the moaning chimneys, and thwart all the hollows and angles,
Round the shuddering house, threatening of winter and death.

But in my heart I feel the life of the wood and the meadow
Thrilling the pulses that own kindred with fibers that lift
Bud and blade to the sunward, within the inscrutable shadow,
Deep in the oak's chill core, under the gathering drift.

Nay, to earth's life in mine some prescience, or dream, or desire
(How shall I name it aright?) comes for a moment, and goes—
Rapture of life ineffable, perfect—as if in the brier,
Leafless there by my door, trembled a sense of the rose.

—W. D. HOWELLS.

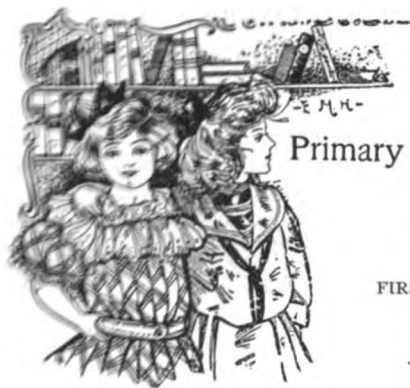
PROGRESS IN GERMANY

A gain of at least 20,000 total abstainers in Germany in less than two years is the report of the German paper, *Die Enthaltbarkeit*.

In February, 1903, the total enrollment of the various temperance societies in the Fatherland was 35,000; In December, 1904, it was 57,921. Allowing a few thousands for those who may be members of more than one society, the total is believed to be not less than 55,000.

Total abstinence organization by professions or callings is a favorite method in Germany. There are abstinence societies among teachers, physicians, merchants, railroad employes, workmen, students, pupils, pastors, and various smaller societies, including even jurists and stenographers.

For Germany, with her "kommers" where college professors and students grow maudlin together drinking to their ancestors, predecessors, successors, public officials and everybody else, to oppose drinking societies with anti-drinking societies seems only logical. But with true German thoroughness the people are coming to realize that the only lasting reform depends on knowledge of the effects of alcohol on health and efficiency, hence the liveliest interest in the temperance movement in Germany now centers around the part which the school is to take in the struggle against alcoholism.



Primary Lessons

FIRST YEAR

THE LEG

BRAIN culture is no longer recognized as the sole object of school training. Slowly but surely the thought has gained ground that body and mind must work in harmony if the human being is to do his best work in the world, and in accord with this thought hygiene and temperance have become an important part of our public school courses of study.

The child of to-day is better fed and better clothed than ever before. He works as well as plays in pure air and amid hygienic surroundings. He is taught how to breathe, and how to sit, stand, and walk. He is given frequent change of occupation. His limbs and senses are trained, and instead of falling behind mentally it is found that his mind is more alert and that he learns faster than ever before. Such a result is indeed to be expected, since every voluntary muscular act is accompanied by stimulation of the corresponding brain and nerve centers.

A graceful walk and proper carriage of the body are in themselves an indication of power, and the means by which they are secured are thus a legitimate part of the study of hygiene. But to obtain the best results, the necessary training must begin early, before bad habits have been formed, and it must also be suited to individual needs. The physical exercises chosen must be formative in all cases, and corrective wherever incipient deformity or other abnormal condition exists. In all such cases, of course, the work should be under the constant oversight of a competent physician.

Enlist the child's own co-operation by frequent object lessons on the different parts of the body, illustrating each by stories, pictures, games, and other attractive methods which will suggest themselves.

In connection with class talks of this sort on the leg, we suggest that the teacher show first what this part of the body is for and how very

useful it is, then how it is made up and fitted for the work it has to do, and finally the care it needs.

(1)

USES OF THE LEG

Call one of the children to you and whisper some errand that you wish him to do. Ask the rest of the class to watch the movements of this child as he does what you have told him.

Call on some one to tell what James just did. Let another name the parts of the body that James used when he walked across the room to do his errand.

Who knows why we all need legs? What else can we do with our legs besides walk?

Kate may run across the room. Harry may hop. Karl may jump as high as he can. Helen may stand.

What parts of their bodies did Kate and Harry and Karl and Helen use just now? Tell something else you have seen a baby do with his legs.

I can see something in this room that has legs and yet can not move at all; what is it? Who knows why the table and chairs can not use their legs as we can?

Who has seen something move about from place to place that had no legs? What is it that moves the clouds up in the sky? that moves the steam engine? the trolley? the automobile? Can any of these things move of themselves? Why not?

How are boys and girls better off?

This is the time to explain that only live objects can move about as they like, while things that are not alive can change their position only as they are moved by something else.

How many legs have you? Name any animal that has just as many legs as you. Name an animal that has two more legs than you have.

Who has seen something alive that has more than four legs? Interest the children in watching different forms of animal life about them, to find how many legs each has and how it differs from people in this respect.

The next time a snail is seen, for instance, they are to notice how it walks, and how many legs it has. So with the fly, the spider, grasshopper, or any other familiar animal, bird, or insect.

Bring live objects into the schoolroom for all such observation work, whenever this can be done. A canary, a globe of gold fish, a pet cat or dog, an angleworm, or other specimens can easily be obtained in most cases, and the children shown how to observe them by the example of the teacher.

This is the time, too, to teach kindness to all forms of life, and to lead the children to see

how much they can find out without hurting or frightening the animal in any way.

If live objects can not be had, use pictures or drawings, and these may be used also to supplement the study from life.

Sum up the points which have been brought out in the class talk and write these on the board as a reading lesson for the children.

POINTS TO REMEMBER

I have two feet.

They help me walk, run, jump, hop and move from place to place wherever I wish to go.

I can move about because I am alive.

I have one more leg than a snail.

I have just as many legs as a bird.

I have two less legs than a horse.

A fly has six legs.

A bird has wings as well as legs to help it move about.

A fish has no legs. It moves by its fins and tail.

A worm has no legs. It moves by crawling.

(2)

PARTS OF THE LEG

Find what parts of the leg are already known to the children, and teach the common name of each part, — hip, thigh, knee, lower leg, shin, calf, ankle, foot.

Have the children touch each part of the leg as it is named, until they know its exact location.

What other part of the body is shaped something like the leg? Find the part of the arm that corresponds to the hip; to the thigh; to each of the other parts of the leg.

Find the parts of the leg you can bend. How many such parts are there? Give the name, joints, to these parts, if the children do not know it already.

In how many ways can you move your hip joint? your knee joint? your ankle joint? your toe joints? Let the children rise and make the necessary movements of the leg to find out.

Does your leg look just like the leg of a dog, or a bird? How is it different from either in shape? in covering?

What is the shape of your leg? Name some-

thing else in the room that is shaped like a cylinder. Name other parts of the body that have this shape.

What kind of a covering do most animals have on their legs? What kind of a covering do your legs have?

Find a part of your leg that feels hard to the touch. What is the name of the hard parts of the body that we can feel beneath the skin? Find a part of the leg that feels soft to the touch. What do we call the soft parts of the body?

Combine the drawing and physiology lessons by letting the children draw a picture of the leg. Some one in the class may pose as a model for this exercise, preferably a boy with well shaped legs.

Another day, the class may draw the leg of a cat or dog, or whatever animal can be brought into the schoolroom for this purpose.

The children may also model in clay the leg of one or more of the animals observed, if material for this purpose is part of the equipment of the schoolroom as it should be.

Test the pupils' powers of observation after such study of the parts of the leg as has been suggested, by showing pictures of the legs of different animals and asking the children to give the name of the animal



"Who's this little boy I see, standing up in front of me?
If he tries real hard he can grow to be a noble man."

to which these belong.

POINTS TO REMEMBER

My leg is made up of eight parts,—the hip, thigh, knee, lower leg, shin, calf, ankle, and foot.

My arm and leg are shaped something alike. I can bend some parts of my leg.

The parts that can bend are called joints. There is a joint at my hip, and at my knee, and at my ankle, and at my toes.

My leg has a covering of skin.

The legs of most animals are covered with hair, or fur, or wool.

The leg is shaped something like a cylinder.

The leg is made up of bone and flesh.

The bones give it strength, and the flesh helps to give it shape.

(3)

CARE OF THE LEG

Choose one of the children to stand by you facing the rest of the class. Measure the distance from the child's hip to the floor, and from your own hip to the floor.

Ask the class if John's leg will ever be as long and large as yours. What makes our legs grow?

Write the children's answers on the board, as far as these are correctly given, and spend a few minutes in talking about each in turn.

We know that our legs are made of flesh and bone because we can feel both when we touch them, and we can see the soft, warm covering of skin that protects them from harm, but where do we get the new material that will make our legs grow larger and longer?

It comes from the food we eat. Nobody ever swallows a bone if he can help it, but we can eat food that makes bone. Milk is one such food. Eggs and meat and bread and oatmeal and ripe fruit and fresh vegetables are other kinds of food that make our legs grow.

They do not need much candy, and tea and coffee are not at all good for them. Of course we should never think of giving these good little workers such things as beer or cider.

There is no food in such drinks, and the alcohol they contain might keep them weak and small instead of helping to make them grow as food does.

Show the picture on page 105 of the baby learning to walk. What is he standing in? Why does he need a frame to hold him up? How does he learn to walk?

Ask the children who have baby brothers or sisters at home to tell whether a little child's legs are harder or softer than their own. Explain that a baby's bones are very soft and not strong enough to bear his weight at first.

We must be careful not to let baby stand on his feet too long at a time, and not to try to make him stand at all until he is ready to do so of his own accord, or his little legs will grow crooked and out of shape.

His legs will grow strong by using them a little at a time. We can give ours more to do because they are stronger to begin with. But we, too, must sit and stand straight if we want to have well shaped legs.

Let us all stand now and see how tall we can make ourselves.

See that each child stands squarely on both feet, with the weight on the ball of the foot,

and that head and shoulders are erect and firm.

Repeat the standing position many times a day till the children take it naturally when they rise.

See that they sit properly as well, and that desk and seat are properly adjusted to the height of each child.

Give frequent exercise in running, being careful that the head and trunk are held erect, and that the child breathes through his nose.

Practice jumping, with knees bent and the weight of the body falling on the balls of the feet.

Call attention to the clothing needed for the leg in this climate. Most animals have thick fur or hair to keep them warm, but we have not, so something else is needed to protect these parts of our bodies.

Children do not always realize when their clothing is damp, or when their limbs are cold, so the teacher must see that they are kept comfortable.

In stormy weather, see that rubbers and gaiters are worn outdoors and removed as soon as the child enters the house. Take care also that no child sits in wet stockings.

Good exercises to develop bodily poise may be given as follows:

Stand erect, lift right foot from floor, cross it over the left, and bring back to position. Repeat with left foot.

Extend right leg to side, to the front, to the rear, bringing it back to position each time. Repeat with left leg.

See that the body is kept firm throughout these exercises, and not allowed to sway back and forth with the leg movements.

Show the picture reproduced on page 108, and tell a story about it, bringing out the points already emphasized as to the care of the leg. These may later be written on the board and used as a reading lesson.

POINTS TO REMEMBER

The food we eat makes our legs grow large and strong.

Some of the best foods are milk, eggs, meat, bread, butter, fresh fruit and vegetables.

Tea and coffee are not good for children.

Beer and wine and cider are not foods. We should never taste them.

Cigarettes will not help us grow. They are bad for everybody.

A baby must not stand too long at a time, or his legs may grow crooked.

We must sit and stand erect.

Our legs need plenty of exercise.

If we keep our legs and feet warm and dry, we shall not be likely to take cold.

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When thy brave trumpets call from east to west
Earth's pulses leap to greet her royal guest,
And there's a magic in thy wildest strain
To woo the bluebird o'er the windy plain,
While dreaming violets stir in sweet unrest,
O wind of March!
—ELIZABETH WINSLOW HARMON.

NO AGE LIMIT TO THE DANGER FROM ALCOHOL

THE recent report of the Committee on Alcohol and Narcotics of the New York State Science Teachers' Association contains the statement that "youths, say under twenty-one, should abstain altogether from alcohol." This is virtually saying that after twenty-one they need not abstain. The present instruction in the schools makes no such distinction, because the cells and tissues of the young are made up of the same chemical substances as those of adults. They are less able to resist injury than adults, but the nature of alcohol does not change when the user crosses the line of his majority.

The public schools teach that the danger from the use of alcohol inheres in the nature of the substance when brought into contact with the human organism, whether that of the man, woman, youth, or child. In this it is in harmony with other writers who say, as does Professor Abel:

"The best bred man [not youths simply] indulging in wine with permissible moderation no more escapes the minor mental changes induced by it than does its meaner slave fail of its sense-destroying power when he drinks 'till he remembers his misery no more."

Again it is *men*, not youths only, of whom the writer in the *Boston Medical and Surgical Journal* says:

"The average *man* [italics ours] with perhaps a family or relatives dependent upon him, should not jeopardize his chances for success by the use of alcohol. The diminution in mental

and muscular power invariably accompanying the use of even small amounts of alcohol is a potent factor in determining his efficiency, chance for promotion, and appreciation by his employers. Clearness of thought, quickness of perception, keenness of sight, deftness of touch, skill, and accuracy in manipulation are valuable assets of the successful man, and each and all of these factors are so immediately affected by the use of alcohol as practically to interdict its use with men whose ambition leads them to hope for and strive for the best in life."

The above is not mere opinion; it is an unavoidable deduction from the results of accurate scientific demonstration and observation.

It was not youths but *men* that Professor Aschaffenburg of the Heidelberg University tested and found able to do fifteen per cent less work after taking alcohol.

It was not youths but *men* that Professor August Smith tested when he found that two and one-half ounces of alcohol given in one day made them less able to work the second and third day afterward.

It is not youths but *men* who, if abstainers, get better rates from life insurance companies, because the death-rate of abstainers is from eighteen to twenty-five per cent less than that of non-abstainers.*

It is not youths but *men* who are required by the Boston Elevated Road to take oath that they do not use intoxicating liquors, or be dropped from consideration as applicants for employment.

It is not youths but *men* who are dismissed from service on the New York, New Haven, and Hartford and other railroads if they are found to be habitual users of alcoholic liquors, or even if they frequent places where such liquors are sold.

It is not boys but *men* who are dismissed from positions as bank clerks if they are seen taking ale or beer with their mid day lunch.

All of this, and more which might be added, shows that it is not youths alone but men also who are so injured by alcohol that their efficiency, at least, is diminished by its moderate use.

It would be gross injustice to the youth of America to-day to teach them that they should abstain *until* they are twenty-one, thereby implying that afterwards they could drink with impunity, when, as Professor Benedict says:

"The experience of the large employer of labor verifies to the smallest detail the deductions of the psychological laboratory, that the moderate use of alcohol diminishes a man's efficiency.

"The habitual use of small amounts of alco-

* Boston *Medical and Surgical Journal*, February 18, 1904.

hol can not be considered harmless even to the select class of men.

"Men, whatever their position or range of their capacity, can not in these days afford to be at less than their best.

"A man is not that complete master of himself that he must be to succeed, with that most intricate organism, the brain, imperfectly functioning.

"By just as much as alcohol in large or small quantities diminishes mental activity, by just so much does it handicap the man whose keenness of perception and manipulative skill are absolutely essential to him in these days of the sharpest competition known in the history of the world."

Advising the young to abstain from alcohol only until they are twenty-one or twenty-five is opposed by science, by business sagacity, by philanthropy, by patriotism, by ordinary human kindness. It is luring to destruction by flying the false signal of security where should be flashed the red signal of certain danger.

The habit-forming power of alcohol has no age limit.

A MARCH SONG

In the orchard old as night draws nigh,
A moist March wind is blowing;
Over my head, in a cloud-rift high,
A glimmering rim in a misty sky,
I see the young moon showing.

Through branches bare the soft air sings
And there seemeth a faint life stirring,
With a sound like that which the light rain brings,
Or the half-uttered words of whispering things,
Or a wish of wee wings whirling.

In darkness deep the brown seed swells,
And up from the warm earth flowing
I am sure that a faint, sweet music wells,
Like the tinkling tones of tiniest bells,
A song of spring flowers growing.

GERTRUDE MERRILL DODDS.

ONE THING AT A TIME

Little David went to the store with his father. His father bought him a sack of candy, but while taking it home, David stumbled and fell. The sack burst and he did not have much candy left for his little sister. She was very indignant and asked:

"Why didn't you let Papa hold the sack while you fell?"—*Little Chronicle*.

Kansas needs uniformity in the matter of scientific temperance instruction. Nothing else will do so much toward fortifying her against the expenditure of vast sums for the care of the victims of vice. Whatever form this instruction may take, it should be uniform and compulsory.—I. L. DAYHOFF, Superintendent

Public Instruction, Kansas.

[In accordance with this policy of uniformity, Kansas has recently adopted the entire New Century series of indorsed physiologies. This puts an oral lesson book into the hands of all teachers of primary grades, and well graded books into the hands of all pupils using books in other subjects.—*Ed*.



Riding and walking and work and play
Make us grow stronger from day to day.

A STOMACH TROUBLE

"Doctor," said the patient, "I believe there's something wrong with my stomach."

"Not a bit of it," replied the doctor promptly. "God made your stomach, and he knows how to make them. There's something wrong with the stuff you put in it, may be, and something wrong in the way you stuff it in and stamp it down, but your stomach is all right."—*Temperance Cause*.

My little brother, Robert, who is not yet four years old, heard his papa talking about going to the seashore next summer. He became impatient to go at once, and was told that the ocean was too cold for bathing in winter.

"But," said Robert, "we can take the tea-kettle with us."—*Little Chronicle*.

Grammar
LessonsFOURTH
YEAR

DIGESTION

ONE of the most serious problems in the conduct of modern affairs is how to avoid waste, or loss of energy.

Manufacturers today are making their largest profits out of odds and ends of material that only a few years ago were discarded as refuse. Business houses are calling in experts and paying them enormous sums to point out leakages in their establishments and show how these may be stopped in future. In one such instance the manager himself was shown to be employing wasteful methods, and he gladly paid the fee that had been agreed upon for being made to see that he did not know how to run his own business.

At present only one per cent of the energy stored up in coal can be utilized in making electric lights. A fortune awaits the inventor who can stop or greatly minimize this loss and render the remaining ninety-nine per cent of energy available for use.

Unquestioned authority also declares that the average young man and woman wastes ninety-nine per cent of the energy stored up in brain and muscle, and puts only one per cent into really valuable achievement. Here is the most serious loss of all, and one that is being illy provided against.

The school, more than any other agency, has the opportunity to stop this waste of energy and find ways and means of turning the current of the child's powers into productive channels. But before energy can be utilized for results it must be produced, hence the proper foods for school children and their transformation into energy in the body are preliminary problems which teachers and schoolmen must solve.

No one expects the child to understand, what the scholar does not, how the latent energy wrapped up in bread and meat and other food stuffs is set free in our bodies to be used in work and play and study. But he can understand and should have the chance to learn that

this marvelous change does take place, and how he can help or hinder it. Knowing these facts, he can be led to see his responsibility in making this energy tell for good.

MAKING FOOD READY FOR THE BODY

An excellent preparation for the study is to read aloud or tell to the class the story of digestion as given of this topic in Dr. Wood-Allens book, "Marvels of our Bodily Dwelling." Follow this with the chapter on digestion in the physiologies for this grade, letting the pupils read the different paragraphs aloud one after another.

Then have the books closed and ask some one to describe the mouth, or reception room for the food we eat. How many servants do we find in this room? What work does each have to do? When are they the busiest?

What is the color of the uniform worn by the teeth? What can we do to keep these little servants always looking neat?

Find how often the children brush their teeth, and if each one has a tooth-brush of his own. Tell why the teeth need to be brushed night and morning and after each meal. Ask some one to illustrate the proper way of brushing the teeth. Why should particles of food between the teeth be removed at once? What kind of toothpicks should be used? Why should this part of the toilet be attended to only in one's room?

Find how often the different pupils are in the habit of going to the dentist, and urge the importance of having the teeth examined at least once in six months. Instead of increasing the expense, this practice lessens it, besides keeping the teeth in better condition.

Point out the location of the three different glands on each side of the mouth which secrete saliva. Let the class find from their books, if they do not know already, the important uses of the saliva.

Let them think of reasons why it is important to eat slowly and to chew each mouthful of food thoroughly before swallowing it.

How is the saliva wasted by chewing gum or tobacco? What effect will such waste have on the body?

Where does the food go after it leaves the mouth? Let some one draw in outline the passage from the mouth to the stomach. How does the food get through this passage? It does not simply drop through, for it is possible to swallow while holding the head lower than the stomach.

Outline the stomach on the board. What is its shape? How much will it hold at one time? Why can it not do its work properly if it is filled too full?

What is the name of the little servants in the stomach whose work it is to change the food still more and make it ready to build up the body? In what part of the stomach are they to be found?

You all know how your mouth waters when you see or smell something good to eat. The stomach does the same thing when food comes into it. If we take food that is good for us and that we like, a great deal of gastric juice is made and the stomach does its work quickly and well. Another thing that helps is to feel happy and to talk only about pleasant things at the table, or when we are eating.

After the stomach has done its work, some of the food is ready to go directly into the blood and be taken to the parts of the body that need it. How does it get to the blood? What becomes of the rest of the food that is not yet ready to be taken up by the blood?

HELPS AND HINDRANCES TO DIGESTION

Show the picture of the horse and his little driver reproduced on page 111, and ask why it is that horses and other animals seldom have indigestion or stomach-ache.

Some of the reasons that should be brought out are that their food is plain and simple, that it is given regularly, and not too much at one time.

Our food is very different from that of a horse, but we should take just as much pains to have it suit our needs as we do to have our pets' food right for them.

Let the class write down a list of foods that are welcomed by the stomach and that are of use to the body. Have the best list written on the board. Call for reasons why any drink that has alcohol in it is not liked by the stomach. What harm do such drinks do if taken only moderately? Name other things sometimes taken into the stomach that are harmful and should never be used.

Spend as much time as can be given to the subject in talking about the best ways of preparing and serving the most common foods, the amount of food needed at one time by different classes of people, the best times to eat, and the importance of good table manners. How do all these things help digestion? How is digestion hindered by the lack of any one of these essentials?

No farmer takes his horse out of the stable for a long drive as soon as it is through its dinner. Why not? Why is it just as wrong for a boy to rush out to play ball or some other stirring game immediately after a hearty meal? What would happen to the food in his stomach in such a case?

One very successful teacher used to advise

his pupils to make themselves as big men on the inside as possible, that when the time came for them to do any work or fill any important position in life they would be ready. One of the ways in which one can make himself big on the inside is to get and keep a good digestion.

AUTHORITATIVE QUOTATIONS

ALCOHOL UNFAVORABLE TO DIGESTION

Alcohol does not give force; it is not force producing. The seemingly exciting impulse which it produces is but a fleeting exaltation of the organism, after which comes the period of fatigue, weakness, and paralysis. The consumption of alcohol neither augments the physiological energy nor the muscular work. Alcohol does not warm the organism. Alcohol does not favor digestion.—G. VON BUNGE, M. D., Professor of Physiological Chemistry, University of Basel.

Sir William Roberts has pointed out that the effect of alcohol is to weaken, or at any rate to retard, the process of digestion. That being the case, it is surely obvious that its use in cases of slow and imperfect digestion can scarcely be recommended. A day in bed is a far more sure alleviator of dyspepsia than any amount of alcohol, and a few days of such treatment followed by a course of regular dieting, rest, and fresh air, will put a patient in a fair way of recovery when alcoholic treatment has utterly failed to produce any good results.—G. SIMS WOODHEAD, M. D., University of Cambridge, Eng.

EFFECT OF ALCOHOL ON PEPTIC AND PANCREATIC DIGESTION

In confirmation of the view that ethyl alcohol (the alcohol present in intoxicating liquors) retards digestion, a recent investigator, Mr. E. Laborde, has communicated some results to the *Journal of Pharmacy*. The influence on peptic and pancreatic digestion of the presence of 0.5 and 2 per cent of alcohol was determined by digesting coagulated albumen with pepsin or trypsin for three or four hours, estimating the albumenoses and peptones produced, and comparing the results with those obtained in experiments without alcohol. Both peptic and pancreatic digestion were distinctly retarded by the small percentage of alcohol present.—W. N. EDWARDS, F. C. S.

HOW ALCOHOL AFFECTS DIGESTION

The effects of alcohol upon digestion are twofold: first by irritating the mucous surfaces with which it comes in contact; and second by combining chemically with the digestive ferments, the products of digestion, or even with the tissues themselves.

Coincident with the anatomical changes brought about by alcoholic irritation, are the disturbances in the function of digestion. There is pain, nausea, distress after eating, depending upon the amount of damage the digestive organs have suffered.—JOHN MADDEN, M. D., in "Shall We Drink Wine?"

ALCOHOLIC DRINKS RETARD ASSIMILATION

Alcoholic drinks are not nutritive, they are not transformed in our body; on the contrary, they retard assimilation and nutrition.—AUGUST FOREL, M. D., Zurich.

TOBACCO A FOE TO DIGESTION

I can not too strongly condemn the use by the young of the cigarette, or in fact tobacco in any form. It affects the appetite, causes headache, and weakens the body, giving a peculiarly sallow look to the countenance. It is a great foe to digestion, and predisposes to mental as

"Smoking must therefore aggravate the catarrhal affections which afflict the greater part of the population of the United States. It increases the flow of mucous from the nose and throat. It should therefore be avoided.

"Those who chew gum before dinner find that when they come to eat and try to chew dry food, there is no saliva to mix with it, and they eat with discomfort. In this case exactly the same thing has happened to the salivary glands that would happen to the peptic glands if one were to smoke before meals. The gastric glands would be emptied, the fluids poured forth into the stomach under the stimulation, not being retained in that organ by food to be digested, would pass on into the intestinal tract, and when food was finally taken, the peptic cells would be unable to pour forth adequate solvents for the mass, and digestion would be delayed until such solvents could be formed by the forces of the body."—*Phrenological Journal*.



Two examples of a good digestion

well as bodily disease.—S. P. WELLS, M. A., Prin. Model School, Goderich.

HOW TOBACCO INTERFERES WITH DIGESTION

There are many people who have the habit of smoking and chewing who think it does them no harm whatever. Many of these people get sick and die of some form of chronic disease before they arrive at middle life. They never suspected that their blood had been poisoned with nicotine and their digestion impaired to such an extent that the tissues of their bodies could not be supplied with the nutriment necessary for the support of life.

"The principal effect of tobacco," according to one authority, "or rather of its strongest constituent, nicotine, is to increase the secretion of fluids from the surface of the throat and intestines. All doctors agree upon this point.

A NEW PICTURE OF MRS. HUNT

In response to the many requests that have come to this Department for a large portrait of Mrs. Hunt suitable to hang in schoolrooms, we take pleasure in announcing that arrangements have been made with one of the leading firms in the country by which we can send such a picture, 18x22 1/2 inside measurements, securely packed, and postpaid, for the low price of \$1.00. In style it is what is known as an artotype, similar to the large pictures of statesmen and poets already found in schools and public buildings, and is an exact reproduction of the fine photograph of Mrs. Hunt which appeared on the first page of the December JOURNAL. We hope many schools will avail themselves of this opportunity to secure a copy.—Assistant Editor.

BOOK NOTICES

THE PHYSICAL GEOGRAPHY OF NEW YORK STATE, by Ralph S. Tarr. \$3.50 net. The Macmillan Company, New York.

Teachers will find in this volume a collection of the articles which first appeared in the *Bulletins* of the American Geographical Society. The entire series, however, has been revised and brought down to date, and in its present form is easily accessible for reference. General and special physiographic features of the state are fully discussed, and their influence upon industrial development is well shown. The more than two hundred maps and half-tone illustrations are an admirable supplement to the text, adding not only to its usefulness but to its attractive qualities. A valuable feature which has not yet appeared in any other form is the complete bibliography which it contains of publications upon the physical geography of the state.

ELEMENTARY PHYSICAL GEOGRAPHY, by Ralph S. Tarr. \$1.40. The Macmillan Company, New York.

If popularity is proof of merit, Professor Tarr may feel well satisfied with his text-books in physical geography. The fifth edition of his "Elementary Physical Geography" has already appeared, and it is being used and recommended by many of the leading high schools and academies of the country. At the same time it seems to us that a disproportionate amount of space and emphasis is placed upon the purely scientific aspects of air, water, and land. Such topics are of great interest in themselves to the scholar, but the practical person of affairs wants much more to know how these topics concern man and his interests, and this phase of the subject is inadequately treated.

NATIONAL CONFERENCE ON SECONDARY EDUCATION AND ITS PROBLEMS. Edited by V. K. Froula. Published by the University, Evanston, Ill.

The papers collected in this volume were presented at the Conference held at Northwestern University, in the autumn of 1893, to celebrate the completion by Dr. Fisk of thirty years of service as principal of the Northwestern Academy. The program as prepared and carried out dealt with so many topics of general educational interest and value that their wider dissemination seemed fitting, hence their appearance in this form. In general, the papers presented discuss the place and function of high schools and academies in our educational system, and their relation to the college and university. Students of pedagogy will find the collection of interest and help.

EDUCATION OF THE WAGE-EARNERS, by Thomas Davidson. Price 75 cents. Ginn & Co., Boston.

The introductory chapter by the editor contains an account of the life and philosophical thought of the late Professor Davidson which gives the proper setting to the book for those unacquainted with the author's other works. In the chapters which follow, the author clearly shows how far our present system of education fails to meet the needs of the vast numbers who must at once become producers upon leaving school. He does more than this. He suggests a remedy which he deems helpful, and which will be found so in many cases. Professor Davidson tested his theories in an evening class on the East Side, and has given an interesting account of the experiment in the closing chapters of the book.

FIRST PRINCIPLES OF AGRICULTURE by Emmet S. Goff, late Professor of Horticulture, University of Wisconsin, and D. D. Mayne, Principal School of Agriculture, St. Anthony Park, Minn. Price 80 cents. American Book Co.

With the exception of the cover, this book is remarkably attractive. The type is large and readable, and unusual care is given to the matter of headings and sub-headings. A glance through the pages shows a multitude of well chosen illustrations, one or more on nearly every page. The joint authors have had large experience in presenting the subject to classes of young men, and these lessons have been tested in normal school classes. The purpose of the book is to counteract the strong influence upon the country boy and girl away from the farm and toward the factory and city. This work for agriculture in the rural schools proposes to make the farm the center of interest, and to make all its industries, its economies, and its science the subjects of thought and study. For this particular class of schools it is distinctly more practical than much that is called nature study. The lessons and illustrations are simple enough for even very young pupils.

PHYSIOLOGY TOPICS FOR MARCH

☐ **PRIMARY**—Parts of the Body used in moving about: Legs, Feet, Toes. Sense of Hearing. Sense of Smell. How the Body may be hurt by Alcoholic Drinks and Tobacco. ■■■

☐ **INTERMEDIATE**—Digestion. Circulation. The Body's Need of vital Organs, Heart, Lungs, etc. The Controlling System of the Body.

☐ **ADVANCED**—Body Cleanliness. The Processes of Absorption and Assimilation. Personal Hygiene.

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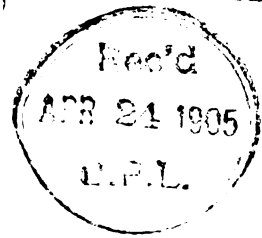
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THE SCHOOL PHYSIOLOGY JOURNAL



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VOL. XIV. NO. 8
APRIL, 1905

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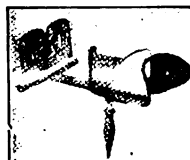
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School Physiology Journal

Vol. XIV

BOSTON, APRIL, 1905

No. 8

APRIL IS HERE

BY EBEN REXFORD

APRIL is here !
Listen, a bluebird is caroling near !
Low and sweet is the song he sings,
As he sits in the sunshine with folded wings,
And looks from the earth that is growing green
To the warm blue skies that downward lean,
As a mother does, to kiss the child
That has looked up into her face and smiled.
Earth has been sleeping, and now she wakes,
And the kind sky-mother bends and takes
Each laughing thing in her warm embrace,
And scatters her kisses over its face.
And every kiss will grow into a flower
To brighten with beauty a coming hour.

THE MASSACHUSETTS COMMITTEE OF TWELVE

ITS HISTORY AND WORK

AN alarming proportion of the young men from Massachusetts examined for admission to the army for the Spanish War was rejected because of tobacco heart. This and other evidence that the Massachusetts temperance education law is not specific enough to insure all pupils in all public schools being taught the evil nature and effects of narcotics, tobacco as well as alcoholic drinks, led the Massachusetts General Association of Congregational Churches to petition the legislature of 1899 for a stronger temperance physiology law, like those of New York, Illinois, Pennsylvania and other states. Official representatives of sixteen other church, philanthropic, and temperance organizations united in this petition.

Three well known Massachusetts clergymen say in the *Reply to the Committee of Fifty* of the fate of this effort :*

"By misrepresenting the provisions of the strengthening bill, by false charges of inaccuracy against the indorsed physiologies, by circular letters sent out by Dr. G. W. Fitz to teachers, enough opposition to the proposal to strengthen the law was secured to cause a division in the legislative committee, and no bill was reported to the legislature."

*See "*Reply*," p. 28.

ORGANIZATION OF THE COMMITTEE OF TWELVE

Following this, what was called the Massachusetts Committee of Twelve on Scientific Temperance Instruction was soon created. Its purpose was well described by one of the members, Dr. Fitz, who said in the last meeting, March 11, 1905 :

"This Committee was made up of representatives from two factions. If no bargain was made, it was expected that each side would yield something so that an agreement could be reached that would be signed by all the members."

That portion of the Committee of Twelve which later became known as the Minority was never a party to such a bargain. They were ready to yield what seemed to them non-essentials, but never what seemed essentials for a sound hygienic and temperance education for all the public school children of the state.

THE FIRST POINT OF DIFFERENCE

As this Committee began its work, the first serious point of difference appeared when a majority of two on a sub-committee of three appointed to prepare a course of study for primary grades voted to exclude all temperance matter from those grades.

This was overruled by the full Committee which accepted the necessary total abstinence teaching; but at the same time the Majority voted that regular study be omitted in certain grammar grades, and that the instruction be given without the use of text-books for fourth year pupils, although they may have books in other studies.

COMPROMISE IMPOSSIBLE

A Minority of three considered such omissions as vital defects that would seriously limit hygienic and temperance instruction, or remove it from an important portion of the public school pupils, future voters of the state. Hence, it was as impossible for the Minority of the Committee of Twelve to yield to the Majority on this matter as it was for Samuel Adams to compromise with George III on the question of the Stamp Act.

Thus the painful struggle in the Committee of Twelve went on for five years. It was especially painful for the Minority. They gladly concede that the Majority was composed of men and women of high character, and presumably desirous of the best interests of the schools. The Minority, however, had definite knowledge of efforts, fortunately unsuccessful, that were continually being made in the great states, by those

altogether opposed to temperance instruction in the schools, or measurably unappreciative of its importance, to minimize this instruction, by removing it, or the use of text-books, from the earlier years of the school course in which text-books in other studies are employed,—efforts which the liquor organs have invariably hailed with delight. Meanwhile, little was done for the enforcement of the temperance education law in Massachusetts, while the cause of temperance proportionately declined in that state and the license vote increased.

Why did not the Minority abandon the battle when agreement seemed impossible, may be asked.

Because of their confidence that frank and kind discussion of these momentous issues would eventually lead reasonable minds at least to a nearer agreement, as the event has proved. Moreover, by staying on the Committee as constant protestants, disagreeable as was the work, the Minority for five years prevented the publication of a very defective course of study on this vital subject which, if sent out, would have been disastrous for Massachusetts and a poor example for other states.

PROGRESS INFALLIBLY REAWAKENS

But the sublime law of progress is not repealed. Confident that the hour is set for that overthrow of alcohol which waits for popular intelligence as to its evil nature and effects, the Minority was sure that "the stars in their courses" were somehow, somewhere helping in this battle. This has been strikingly illustrated by recent events.

A short time ago the very course of study that for five years the Minority has, in substance, been urging upon the attention of the Committee of Twelve was recommended by a committee made up of the most distinguished scholars in the English-speaking world, representing the medical profession of England, Scotland, Ireland, and Wales, and by them sent for adoption to all the public schools of the foregoing countries.

This stimulated public opinion in Massachusetts, and a new committee was immediately organized, called the Committee on International Course of Study in Temperance Physiology. This new Committee asked the Committee of Twelve, in view of this fresh opportunity for wider harmony, to unite with them in recommending for the schools of Massachusetts this course of study which had thus become international.

While not complying with this request, the Committee of Twelve voted, Jan. 28, 1905.

To recommend this study in all grades from the fifth to the eighth inclusive, from two of which they had before excluded it.

At the last meeting, March 11, they voted To recommend suitable books for pupils' use in temperance physiology in the grammar grades above the fourth year;

To make out no course for high schools;

To table their list of recommended books on this subject, and dismiss the sub-committee on books.

The proposition was then made that the committee of Twelve disband.

DEFECTS IN THE COURSE NOW PROPOSED BY THE MAJORITY

The course of study now recommended by the Majority of the Committee of Twelve, though improved, is deficient in two respects:

In its provisions for the fourth grade.

In its provisions for the seventh and eighth grades.

There is no special objection to their course for fifth and sixth years as it now stands, except that it would be better to divide the work definitely between the two years, for the better guidance of the teacher, instead of massing it all together.

The trouble with the course for the fourth year is that it is largely a repetition of the work proposed for the second and third primary years. It does not specify the simple, physiological facts which are appropriate and necessary for the children of the fourth grade, and it eliminates the use of books for pupils, which might correct this deficiency in physiological matter. Their specification on this point reads:

"The instruction shall be oral, that is, without the use of text-books in the hands of the pupils during the first four grades or years of school.

There shall be a supplementary use of books."

Who is to have this "supplementary use of books?" Not the pupils, for the preceding recommendation says they must not have a book in their hands in this subject.

Instruction must necessarily be oral in the first three primary years, but in the fourth year pupils are old enough to have a book and they need it as one source of information.

The use of books by pupils as a supplement to, or in connection with, oral instruction brings the truth to them through two avenues,—the ear-gate by the teacher's instruction, and the eye-gate from the book. The spoken word escapes, the written word abides. The two combined make the impression more indelible, which is of supreme importance in this subject to prevent cigarette and other unhygienic habits. Moreover, where pupils of this grade have books in other subjects there is no reason why they should not have them in this, to be used in the same way.

The objection to their course for the seventh and eighth years is that it is deficient in the necessary new matter in physiology and *temperance*. It tells the teacher to review the work of the previous year, which is simply providing for repetition without the addition of any new matter. It recommends the addition of some new matter in hygiene, which is good, but hygiene without physiology is dogmatic assertion. Professor Gaule says:

"Instruction in temperance physiology can not be imparted without a foundation in physiology, giving the idea that human life is based on definite laws."

FOUR ESSENTIALS INSISTED UPON BY THE MINORITY

The Minority of the Committee of Twelve from the first have steadily insisted upon four things, namely, that if the Committee published a course of study in temperance physiology for the schools of Massachusetts that course should recommend:

1. A brief topical outline of the truths that constitute the physiological reasons for total abstinence from alcoholic drinks and other narcotics, and for obedience to other laws of health.
2. Such a division of these truths as is adapted to each succeeding grade of school, beginning with the first primary and ending with the first year of the high school,* thus covering the whole subject without unnecessary repetition while guiding the formation of habits during those susceptible years.
3. That pupils who have books in other studies shall have books as one source of information in this study.
4. That, notwithstanding the different proposals of the Majority, this study be given as a regular branch in each and not omitted in any of the four years or grades known as the fifth, sixth, seventh, and eighth, where it reaches the largest number of pupils and at the most impressionable period.

This does not mean that the Minority want

*Omitting the ninth grade in schools having nine grades below the high school.

instruction in this subject to be given every day in the school year nor every lesson to be a temperance lesson. It means only that time necessary for covering the subject shall be given to the study. This requires but 2 or 3 lessons per week for 10 weeks in each of the 3 primary grades, and 3 or 4 lessons per week for 10 weeks in each of 6 years above the primary, making in all at the most but 330 lessons, distributed through 9 years, *in the whole subject of physiology and hygiene*, of which not more than 1-4 or 1-5 need be temperance lessons. From 500 to 900 lessons in geography are often given in the same time. Sir Victor Horsley of London says:

"The English physicians ask that this study shall rank third in importance for the schools of the United Kingdom, language first, arithmetic second, hygiene and temperance third."

TWO THINGS THE MINORITY HAVE NEVER ASKED FOR

Two things the Minority have never asked for:

1. For what school men call "text-book methods" in the use of books in the fourth grade, that is, lessons which the pupils must memorize and recite from the book? The false charge that the Minority want that ancient method seems to be the main reason given by the Majority for refusing books for fourth year pupils.

The Minority are too well acquainted with pedagogy to ask for such an archaic method. They have denied this charge again and again, stating that all they ask is that books adapted to grade be recommended for fourth year pupils who have books in other subjects, to be used according to the best modern methods, and when this false accusation has been repeated, they have keenly felt the injustice.

2. The Minority have never taken, as has been charged, any time in the meetings of the Committee of Twelve to discuss a particular book or a particular class of books, "indorsed" or otherwise, or a particular publisher or any publishers.



"O sacred month of all the year!
Its revelation rainbow spanned,
And glorified by God's own hand."

The Minority have stood for and pled for the truths adapted to grade for all the children. The question whether certain books contain these truths was not reached, for the report of the sub-committee on text-books was tabled and the sub-committee discharged without discussion by the full Committee. The Minority was not represented on that sub-committee, hence they have had no part in that portion of the work of the Committee of Twelve.

In view of the public need, is it not time for our teachers and school authorities generally, and all divisions of temperance reformers to unite cordially and earnestly in the enforcement of those temperance instruction laws, and in that international course of hygienic and temperance teaching to which eminent scholars and philanthropic publicists abroad are now resorting as the best safeguard against the personal ruin and national degeneracy induced by the violation of the laws of health, including the use of intoxicating drinks?

Signed by the minority:

ALBERT H. PLUMB, D. D.,

Vice Pres. Mass. Total Abst. Society.

JESSIE FORSYTH,

International Supt. Juvenile Work of the Good Templars.

MARY H. HUNT,

Nat'l and Internat'l Supt. Sci. Temp. Inst'n of the W. C. T. U.

CAUSE AND EFFECT

For the past ten years, New York State has had a strong temperance education law requiring all pupils in all schools to be taught the nature and effects of alcoholic drinks and other narcotics in connection with the laws of health. Now comes the news that the company which operates the New York subway system owned by the city has taken a radical stand against drink.

"Take a drink and you lose your job" is, in effect, the dictum that has just gone forth.

The company is now employing large numbers of new men and taking back many of the old employes who went out in the great strike that is now practically broken. The company has made use of the opportunity to take a firm stand against intoxicants. All successful applicants for positions are required to sign a total abstinence pledge as a condition of their being taken on. The company employs thousands of men.—*New Voice*.

Governor Hanly, of Indiana, has announced as his policy that he will not appoint any man to office who takes intoxicants, whether he gets drunk or not; that he believes the policy of railroads and other large business interests in refusing to employ drinking men is a good one, and he intends to apply it to the business of the state.

BELIEVE

BY CARA WATERMAN BRONSON

Believe God is!

That all the heights and breadths and depths
are his;

The birds of light,

The fears that walk at night,

The psalms of gladness and the silences;

The instinct strong that will not let thee stay

Thy hands from labor though thy sight be dim—

All, all are but the windings of the way

That leads at last to Him.

Believe thou art

Of all the wondrous universe a part;

Not small or slight,

But needful in his sight

Who planned thee, soul and body, mind and heart!

Who formed thee, tuned thee, set thee, and doth know

If to his touch thou givest answer true.

Then fail not, wondering heart, though thou dost go

Softly the long days through.

AS OTHERS SEE US

The government adoption and publication of the "Reply to the Committee of Fifty by Mrs. Mary H. Hunt, as Senate Document No. 171," is evidence that the National Department of Scientific Temperance Instruction in the public schools is not uninformed on the scientific side of the alcohol question.

The title page of the British Syllabus of Study reads:

"Suggested Courses of Teaching in Hygiene and Temperance for Boys and Girls in the Public Elementary Schools of the United Kingdom.

"Issued by the Committee of the Medical Profession in the United Kingdom, constituted to promote the Teaching of Hygiene and Temperance, Chairman, Sir William Broadbent.

"Based upon the scheme prepared by Mrs. Mary H. Hunt, for use in the schools of the United States of America."

This is further evidence that the National Department's efforts to find how to so teach this vital subject in the public schools that it will shape the life of a nation have resulted, in the opinion of some of the best thinkers in the English-speaking world, in the evolution of sound pedagogical principles.



Primary Lessons

SECOND YEAR

BEER

A FEW months ago, a Japanese sailor on board the flagship of his fleet wrote to a friend explaining why he had become a total abstainer. A part of his letter ran as follows:

"My body has become a very precious thing, because I have consecrated it to my country. Therefore, it is not to be injured by such things as alcohol and nicotine. I must guard it with every possible care and attention until I meet my fate in the cause to which I have given myself."

With the Japanese, love of country is a passion. The present war has shown that in all ranks of society no endeavor is too great and no sacrifice too costly if thereby the national honor may be furthered. But people elsewhere will be as loyal and respond as eagerly to calls to service, if they can be given an equally inspiring motive.

This is especially true of children. Their fresh, young enthusiasm is quickly kindled to deeds, and requires only to be given proper direction. Why then shall we not, even in their earliest years, teach them that their bodies also are a very precious thing, and as such are not to be injured by alcohol or any narcotic?

No American, we may hope, will ever again need to meet his fate on the battlefield fighting for his country; but national honor must be upheld in peace as well as in war, and the same qualities which have distinguished the Japanese in their conflict with Russia are needed every day and in every form of endeavor in our country, and these qualities can not be acquired or maintained if intoxicants are habitually used.

No child old enough to go to school is too young to be tempted to taste beer; hence, he is not too young to be taught why he should refuse to yield to the temptation. Teaching on this point, as on all others, must be simplified to the child's comprehension, and so presented as to arouse his interest and influence

his conduct. The following lesson has been prepared with these thoughts in mind, and is offered in the hope that it will prove helpful and suggestive to teachers.

The main points on this topic to be developed in the second grade are that beer is made from grain, a food substance; that it is changed in the making to a harmful drink; and some of the ways in which it is likely to hurt those who use it.

(1)

MADE FROM A FOOD

Bring into class one or more kinds of food made from some grain, perhaps a plate of crackers, or a slice or two of bread. Give each child a cracker or a small piece of whatever article of food has been brought in. Also sketch a loaf of bread on the blackboard.

What is bread made of? Of what are crackers made?

Many of the children will not know, but if any one can tell give him a chance to do so.

Show pictures of grain fields, and have specimens of all the principal grains raised in this country for the children to look at. These may be kept in small bottles, each properly labeled, and used over and over again by the teacher, in other lessons as well as in this.

Pass these bottles around, one at a time, or let the children come to the desk and examine them, until they are thoroughly familiar with the appearance of all these grains and able to give the right name of each at sight.

In city schools, especially, where children seldom or never see growing grain, it will be well to soak a few kernels of wheat, corn, rye, or barley in water, and plant them in boxes in the schoolroom long enough beforehand so that the young plants will be a few inches high before this lesson is given.

Place these boxes on a desk or low table where the children can gather around and look at them. Tell how tall these plants grow in the field; where on the stalk the new grain will appear; and how its color changes as it ripens.

Tell briefly the story of the gathering of ripe grain, and the processes by which it is threshed, cleaned from chaff, and ground into flour.

Let the children name all the different kinds of food they can which are made in any way from grain. After their present knowledge on this topic is exhausted, let them find out what they can on the subject at home or in other ways.

Write on the board the various articles of food that are commonly found on the ordinary table at breakfast, dinner, and supper, and help the children to decide which of these foods are made from some kind of grain.

After they know some of the most important uses to which grain is put as a food, tell them that bread, which is made from grain, is called "the staff of life," because it helps to support so many people.

But sometimes this good grain is put to a very bad use. Instead of being made into bread, or some other food to keep people alive it is

(2)

CHANGED INTO A HARMFUL DRINK

Draw on the board a barrel, bottle, and glass, and label each *beer*. Put these beside the picture of the loaf of bread.

These drawings stand for something else that begins with b. Is beer the same thing as bread? Does it look like it? Why not? How is it different?

Find out how many of the children can answer these questions. Let them tell all they can on these points, then give such additional facts as they can understand, until they know why beer and bread are not at all alike, although both are made from the same kinds of grain.

If woven into a story like the following, many of the truths that should be brought out will be more quickly grasped and better remembered.

CASPAR'S SCHOOL

There was nothing Caspar liked to do better than to play school with his three sisters.

He was always the teacher, because he was the oldest and knew what to do better than they did.

Once, when the girls had grown tired of sitting still and doing just as he told them, Caspar put his pet dog and cat and the toy animals from his Noah's ark on the table, and played they were his pupils.

Jean and Esther and Lucy thought such a school was very funny. They stopped playing with their dolls, and listened to what Caspar was saying.

"This is a phys'ology lesson," he told his new pupils. "It's about beer, and I'm going to 'xplain why you mustn't ever drink it, 'Towser, and Jumbo, and Kitty Gray, and all the rest of you.

"P'raps you think now that beer is a good drink, just because it's made out of good grain, same as bread is; but it isn't.

"Beer has alcohol in it, and alcohol is a poison."

"I don't believe it," interrupted Jean; 'cause poison kills folks, and lots of people drink beer and it doesn't kill them."

"That's because they don't drink enough beer at once," said Caspar.

"There's only a little bit of alcohol in one glass of beer, but there is some. My teacher said so yesterday, and my phys'ology says so, too."

"Course that little bit isn't enough to kill you, but it's enough to hurt some, and it makes you want more, like as not, till by and by you can't let it alone. So I'm never going to drink any."

Just then Kitty Gray thought of a mouse she wanted for her dinner and jumped down from the table, so the physiology lesson came to an end. But Jean asked mother about beer, and she told her that Caspar was quite right.

Show the picture as you tell this story.* Let the children find Caspar and each of his sisters, and point out the different animals on the table. Which ones are alive? Which ones are not?

Call on several of the children to tell what they remember about the story, dwelling on the facts brought out in regard to beer.

Then write the words, bread and beer, on the board as headings for two parallel columns, and place under each the facts thus far developed. They will read something like this:

THE DIFFERENCE BETWEEN

BREAD	AND	BEER
Bread is a solid		Beer is a liquid
Good bread has a sweet, nutty smell		Beer has a strong, bad odor
Bread is one of our best foods		Beer is not a food at all
Bread becomes better in the making		Beer is spoiled in the making
There is no alcohol in bread		There is alcohol in beer
Alcohol is a poison		
Even a very little may hurt us		
It may make us want more		
We will not drink beer or any other liquor that has alcohol in it		
Then it will not hurt us		

BAD EFFECTS ON THE USER

How does beer hurt people? This will be one of the child's first questions when he is told that this drink is harmful and that he must not taste it.

It is best to name only a few of its bad effects in this grade, leaving others to be brought out in more advanced classes. Choose those which the child can best understand and remember.

Every child wants to grow. He wants to be big and strong.

Then he must let beer alone, for beer-drinkers are not so strong as they would be if they drank water instead of beer.

There is nothing in beer to give strength. It is not a food. It can not make good muscle.

*See page 119

The beer-drinker is often fat, and slow in his movements, instead of being strong and quick as he ought to be, and as he might be if he never touched beer.

Sometimes he has a weak heart in the bargain. Then he can not run so fast nor do so much as the water-drinker.

What is the part of the body that we think with? Where is it?

Beer hurts this part, the brain, as well as the muscles. It makes one sleepy when he ought to be awake. It makes him dull and stupid when he ought to be bright and quick. It makes him slow at everything.

What is the part of us that makes us know when we do right and wrong? It has a long name,—conscience.

Beer hurts this part. It makes it harder for the drinker to know what things are right. It makes it easier for him to do wrong.

What a bad enemy beer is to the one who drinks it, to harm him in so many ways and do him no good at all!

What shall we do if we meet this enemy? How can we be sure it will never hurt us?

usage of a poison can not but be injurious. That they do not give strength has been proved during months and years of work by those who are drinkers and those who are not, the result being always in favor of the latter who always produce more work and better. They do not warm, because the heat produced by them does not endure, and the drinker after a moment of excitement suffers more from the cold.—COUNT LEO TOLSTOI.

BEER INJURIOUS TO HEALTH AND LIFE

Where is the man who dares to deny that alcoholic drinks cause the gravest injury to health and to life; that beer, especially, diminishes intellectual capacity and strength of will, and makes a man a repulsive caricature?—MAX

GRUBER, M. D., Professor of Hygiene, University of Munich.

BEER-DRINKING SHORTENS LIFE

Insurance companies expect a man otherwise healthy, if he is addicted to beer, to have his life shortened from 40 to 60 per cent.

Thus, if he is 20 years old and does not drink beer he may reasonably expect to reach the age

of 61. If he is a beer-drinker he probably will not live to be over 40 or 45. This is a cold-blooded business fact.—S. S. THORN, M. D., Toledo.

BEER TENDS TO MAKE THE DRINKER BRUTAL

Facts gained from wide observation show that beer, more than any other liquor, tends to make the drinker brutal. It seems to deaden the conscience and thus prepare a man for committing crime.—*Temperance Cause.*

BEER-DRINKING MAY CREATE THE ALCOHOLIC APPETITE

No other alcoholic drink leads so readily to immoderation as beer.—G. VON BUNGE, M. D., Professor of Physiological Chemistry, University of Basel.



"This is a phys'ology lesson about beer, and I'm going to 'xplain why you musn't ever drink it."

AUTHORITATIVE QUOTATIONS

BEER NOT A FOOD

Beer is not a food. Let a man drink much beer, enough to make the amount of nourishment in it of value, and the other influences produced by such a quantity will be manifest to such a degree as to cast the factor of nourishment into the background.—J. ROSENTHAL, M. D., Professor of Physiology and Hygiene in Erlanger.

BEER DOES NOT GIVE HEALTH OR STRENGTH

The advocates of spirits, wine, and beer assure us that these drinks give health and strength, that they give warmth, and cause rejoicing. Today it is absolutely proved that this is not so. These liquors do not give health, for they contain a powerful poison, alcohol, and the

ALCOHOL IN BEER

All beers, ales, porters, ciders, and wines (home-made or not) contain alcohol in varying quantity, but the character of the alcohol in every case is the same.—H. NEWELL MARTIN, M. D., Late Professor of Biology, John Hopkins University.

LIQUID BREAD

I REMEMBER once seeing over a public house door the sign, "Good ale is liquid bread." I went into the house and said, "Give me a quart of liquid bread." The landlord said, "Ah, first rate sign, isn't it?"

"Yes," said I, "if it's true."

"Oh, it's true enough; my beer is all right."

"Well, give me a bottle to take home."

He gave me a bottle of his liquid bread. I took it to Dr. Samuelson, an analytical chemist, and said to him, "I want you to tell me how much bread there is in this bottle." He smelt it and said, "Its beer."

"No, no," I said; "it's liquid bread."

"Well," he said, "if you'll come again in a week, I'll tell you all about it." He charged me twenty dollars.

In a week's time I went to know all about the liquid bread. The first thing about it was that there was ninety-three per cent of water. "It's liquid, anyhow," I said; "we'll pass that. Now let's see about the bread."

"Alcohol five per cent."

"What's alcohol?" I asked.

"There's the dictionary; you can look it up for yourself."

I looked it up, and found alcohol described as a "powerful, narcotic poison." "Well," I thought, "this is the queerest description of bread I ever read in my life."

Then he gave me a list of small percentages of curious things which he had carefully put down on each corner of a piece of white paper, and which amounted to about a quarter of a thimbleful of dirty looking powder. That was the bread—two per cent.

"And there would not be so much as that," said Dr. Samuelson, "if it were Bass' or Allsopp's ale. This is bad beer."

"So the better the beer, the less bread there is in it?"

"Certainly. It is the business of the brewer to get the bread out of it—not to put the bread into it."

This is the simple, scientific truth with regard to beer, and the case is stronger with regard to wine and spirits. There is no nourishment in them at all. Science tells you so. Experience

tells you so. They have no use in the human body, either as food or medicine.—W. S. CAINE, M. P.

Considering the evidence, are we not fully justified in calling alcohol a poison, that is, a substance inimical to the organism, producing injury in small, and death in larger quantities? Are we not, moreover, fully justified in denying it a place in any classification of foods, because it neither repairs tissue waste, nor protects the organism, nor is it a source of organic force?

Let us then continue to teach our boys and girls that alcohol is a poison; that the fact of its being oxidized in the body, if taken in small quantities, is not sufficient to constitute it a food; and that the normal man is never benefited, but rather harmed by it, in any quantity.—*Alkaloidal Clinic.*

AN EASTER SONG

BY RICHARD LE GALLIENNE

Arise, my heart, and sing thy Easter song!
To the great anthems of returning bird,
And sweetening bud, and green, ascending
blade,

Add thou thy word.

Long was the winter and the waiting long;
Heart, there were hours, indeed, thou wert
afraid,—

So long the Spring delayed.

Shut in the Winter's alabaster tomb,
So white and still the sleeping Summer lay
That dead she seemed;

And none might know how in her magic side
Slept the young Spring, and moved, and
smiled, and dreamed.

Behold, she wakes again, and, open-eyed,
Gazes in wonder, 'round the leafy room,
At the young flowers. Upon this Easter Day
Awaken, too, my heart, open thine eyes,
And from thy seeming death thou, too, arise.

Arise, my heart; yea, go forth and sing!
Join thou thy voice to all this music sweet
Of crowding leaf and busy, building wing,
And falling showers;
The murmur soft of little lives new-born,
The armies of the grass, the million feet
Of marching flowers.

How sweetly blows the Resurrection horn
Across the meadows, over the far hills!
In the soul's garden a new sweetness stirs,
And the heart fills,
And in and out the mind flow the soft airs.
Arise my heart, and sing, this Easter morn;
In the year's resurrection do thy part,—
Arise, my heart!

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The wild and windy March once more
Has shut his gates of sleet,
And given us back the April-time,
So fickle and so sweet.

—ALICE CARY.

DRINK AND COMMERCIAL EFFICIENCY

FOUR years ago leading papers in France, Belgium, Russia, and England were anxiously discussing the causes of the commercial supremacy of the United States. Most of the business men who contributed articles on the subject agreed that the American workman is the chief agent in enabling American manufacturers to take first place, and that he is far less given to dissipation than the workmen of other countries.

Investigation as to the causes of this greater sobriety in America showed that in this country alone there has been widespread public school study of physiology, hygiene, and temperance by legislative enactment during the past ten or fifteen years. During this time the children have been carrying home the lessons of health and sobriety taught in the schools, including the fact that alcohol injures working ability, and as a result of this wide diffusion of knowledge fully 3,000,000 men, in different forms of employment in America, according to the *Birmingham Post*, are now required to be total abstainers.

Once convinced of the vital relation of sobriety to commercial success, the nations of Europe are trying to secure the same results through education of their children and youth in hygiene and temperance. In England, especially, meetings have been held by almost all classes and professions to discuss the situation and find how best to educate the people in this matter. The action of the Medical Association of the United Kingdom in recommending a definite course of study in temperance physiology to every school board in England, Scotland, Ireland, and Wales has already been mentioned in these columns.

In Edinburgh, a great meeting, lasting for four days, convened this month to consider the same problem, and in London, on the 8th inst. the Lord Mayor, supported by the two sheriffs, the President of the London Chamber of Commerce, and an imposing array of business men of age and experience and of the highest standing in the commercial world, directors, members of Parliament, and medical men of the first rank, presided over one of the most remarkable gatherings of the year.

"And what had this representative gathering of prosperous British business men met for?" asks a prominent weekly, the *Alliance News*.

"Actually to declare war upon the drinking customs of business men, and by inference upon the traffic, the very apple of the eye of Mr. Balfour and his Government, which fosters and thrives upon these customs.

"And the operating motive was simply and solely this—that drinking is bad for business all around, bad for the worker, bad for the employer, bad for the State. The President of the Chamber of Commerce said the moment he found a man was drinking he considered it the truest kindness to discharge him at once, and he averred that employers were coming more and more to feel that they must have sober men.

"The Mansion House is redolent of dinners and diners, a place where men have often dined 'not wisely but too well.' Anything approaching Puritanism is anathema within those walls. Yet no spirit of timidity or hesitation curbed the frank expressions of the speakers, who from the point of view of the expert scientist, the medical man, the magistrate, and the employer roundly condemned drinking as an aid to physical and mental efficiency. They declared that within their own knowledge it had ruined the careers of scores of promising men who had trusted to its treacherous promises of help.

"Sir Victor Horsley, cool, clear, passionless, precise, stated the case against alcohol as an aid to physical efficiency in such a manner that one would think no reasoning being could resist. Speaking all through with scientific precision, and basing every statement upon tested experiments, he left no standing ground for the believer in alcohol as a food, or as a beneficial agent in the physical economy.

"Starting from the proposition that alcohol is not essential to life, Sir Victor showed that it was not beneficial to the body in any respect, that it retarded the processes of digestion and assimilation of food, that it lowered the temperature and reduced vital force, that it specially selected the nervous system for attack, that it had an apparent stage of excitation inevitably followed by a long, paralyzing effect upon the organs of the body, that

whilst it remained in the body intellectual processes were slower and less accurate, and physical work was less efficiently done. His conclusion was that for the person and for the nation there was 'no profit, but only loss in the use of alcohol.'

"All this was stated in the manner of a man who has carefully sifted the evidence, separated the essential from the non-essential, the apparent from the real, and absolutely refused to be led off the path of truth by alluring fallacies. His conclusions bore the impress of truth and fact, and visibly arrested the attention of his audience.

"The remarkable speech of Dr. Hyslop, senior physician of the Bethlehem Royal Hospital, was in some respects the most suggestive and thought-provoking of the afternoon. He grappled with what is after all the first of imperial questions, viz., the physical, mental, and moral condition of the imperial race. He declared that one in twenty of our population [that of Great Britain] was inefficient.

"He called attention to the obvious fact that we are ceasing to be an agricultural and fast becoming an urban people. The consequent strain on the nervous system is much greater than that our forefathers had to endure. We are more sedentary, more confined to rooms with limited air space, more largely housed in overcrowded tenements. Under these adverse conditions alcoholic indulgence tells with increasing force and more disastrous effects.

"The use of alcohol is an abuse," he declared, 'in a healthy body.' Drinking brings about the suicide of a man's commercial supremacy.

"His plea for the building up of a sound, healthy people from the foundations gained in impressiveness by the lack of oratorical skill in its presentation; as of a man burdened with the weight of a message beyond the power of words to utter. One would like to see this argument developed and amplified, and its lessons driven home upon the hearts and minds of our statesmen.

"It was encouraging to see some two dozen reporters in attendance, as thereby we hope many thousands of readers have had their attention called to one of the most vital questions which a commercial nation can possibly be called upon to face."

Such meetings as these are rapidly opening the eyes of the world to the gravity of the problem which confronts them. The next step will be the adoption of regular, systematic instruction in physiology, hygiene, and temperance as the most permanent method of its solution.

DRINKING IN GERMANY



"The shepherd sun comes o'er the hill
To let out the flocks of spring."

"THEY don't get drunk on beer in Germany," is a lie that has been peddled so industriously in this country that many good people have believed it.

But this lie will carry no farther. The German nation is waking up to its besotted condition. Count Douglass, a close friend of the Kaiser, has introduced a drastic temperance reform bill in the Prussian diet. It prohibits the sale of intoxicants to minors, to habitual drunkards, and persons under the influence of liquor; no intoxicating liquors are to be sold before 7 o'clock a. m.

This shows plainly that Germans have become so addicted to drink that they get drunk the first thing in the morning,

which unfits them for the duties of the day.

The bill also provides that charts showing the effects of alcohol shall be posted in all public places. If any are disposed to claim that beer, on German soil, does not intoxicate, it will be well to call their attention to this bill of Count Douglass'.

France drinks wine and Germany consumes beer, and each nation has become alarmed about the degeneracy and degradation of its people.

—*Keystone Citizen.*

Wine merchants begin to complain of the growing total abstinence interest in Germany.—
FRL. OTILIE HOFFMANN, Bremen.



Grammar Lessons

FIFTH OR
SIXTH YEAR

FOOD

A FEW weeks ago, it was announced through the press that there must be thousands, very likely 60,000 or 70,000 children in New York City alone, who often arrive at school hungry and unfitted to do well the work required of them.

Later and more thorough investigation by a special committee appointed by the Board of Education has shown that matters, though bad enough, are not quite so serious as was at first supposed. Comparatively few children go to school without any breakfast at all, but very many are insufficiently or poorly fed because their food is not well selected or properly cooked.

Of the children attending school from the poorer quarters of New York City, about two-thirds have been found to have only bread with coffee or tea for their morning meal. Nearly a thousand have never more than coffee or bread for breakfast. Conditions in other large cities are being found to be little better, and even in country districts where food is plentiful it is so poorly prepared that the proportion of children who are improperly fed before beginning the day's work in school is all too large.

It is not to be wondered at that such children are anaemic and unable to keep up with their classes. The wonder is that they can do any successful school work at all.

Teachers and school boards are doing something to meet the difficulty by serving meals of hot soup with bread or other simple nutritious foods at noon time. This is necessary in many cases to relieve immediate distress, but at best it is but a palliative; it does not remove the cause of the trouble.

It is true that poverty prevents many children from receiving enough nutritious food for their needs, but it is equally true that even the poorest would be far better fed if those in the home knew how to make the most of such food as they are able to buy.

Practical instruction which will meet this need is remedial work which it is always in the power of the school to do. Few children out of the whole number can go to a regular cooking school, but all, boys as well as girls, may learn in connection with their regular work in physiology and hygiene enough about food in its relation to human needs to revolutionize matters in many a home.

Pupils in these grades can understand, and will be vastly interested in finding out, what foods are best for the body and which are not so good; how much food and what kinds are needed every day; what are the most nutritious foods that can be bought at different seasons of the year for the least money; the simplest and best ways of cooking the foods that they have on their own tables at home; necessary rules for eating; and the reasons why alcoholic drinks of any kind should never be used, either in place of foods or in addition to them.

PROPER CHOICE OF FOODS

Before we can tell what to eat we must know what foods are in the markets near us, what we can afford to buy, and which of these are best for us.

In every case the teacher must consider these questions before planning lessons on food for her class, and shape the work accordingly.

In the first place, ask the class to find out and report where the different articles of food come from that appear on their own tables every day.

If these come from the market and grocery, let them find what kinds of food are now in season, and the prices of those most frequently bought. If all or a large part comes from their own gardens or farms, the choice will be more restricted, but they can still find what foods are now in season there.

Have lists made of the principal foods that are thus available. The next thing is to find which of these we can afford to buy. Some families can have strawberries in December, while others can afford only the very cheapest necessities of life at any time of the year. Cross off from the lists all foods beyond the means of your special pupils.

From the foods that we now have left, we must decide which are best for us, that is, which will do us the most good for the money we have to spend.

We need food for different reasons: to help us grow, to repair worn-out parts of the body, to keep us warm, and to give strength for work and play. Have the class find from their physiologies which of the foods on their list as it now stands will meet one or more of these needs.

Which, if any, will not meet these needs? All such can be crossed out at once, for we do not want to waste time over substances that are of no use or are actually harmful to the body.

Most people nowadays know very well that alcohol is not a food and that all drinks containing this poison are harmful to the healthy person. But some in the class may still think that beer, or cider, or some other drink of the kind may be taken in moderation without harm.

Find out if this is true of any of your pupils. If so, show from the physiologies and from the quotations from authorities at the end of this lesson that alcoholic drinks of any kind do not aid growth or strength, do not repair waste, do not keep the drinker warm, or answer any of the other necessary qualifications of a food; that, on the other hand, they may harm the user in some or all of these ways, and give him, besides, an appetite which he can not resist for more or stronger liquors.

If all in the class have right ideas on this subject, see that they know and can tell *why* alcoholic drinks should not be used as food or in any other way by well people.

PREPARATION OF FOODS

Suggest that each member of the class imagine that he has a certain sum of money with which to buy all the food for his family at home the next day, and ask him to find what he can get for this sum and report to the class at the next lesson.

The amount may be twenty cents for each member of the family, or as much as the teacher may decide upon. The conditions should be that each pupil act independently and find how he can spend the money to the best advantage.

Discuss each report with the class, and help the pupils to decide whether the money has been wisely used. If not, *why* not? The physiologies should be referred to to help decide these points.

Has too much money been spent in any case for a single kind of food, or for too high priced a food? Has meat been planned for more than one meal in the day? If so, what other foods could better take its place? Are there enough fruits and vegetables on the lists?

When all the menus have been amended to represent the best foods available for the money, take up the question of the preparation of these foods for the table.

Which of them need to be cooked? *Why*? In what different ways can they be cooked? Which are the best ways? *Why*? Refer the class to their books on each of these points, until their answers are correct and they can give clear reasons for each.

Ask all in the class, boys as well as girls, to find out how to cook some one dish that appears often on their tables at home. When they report on this in class, let the others make better suggestions if they can in any case, the teacher acting as final umpire.

Continue this plan till all the foods ordinarily found on the home tables of the pupils have been discussed, and all in the class are able to describe at least one good way of preparing each.

In most homes the parents will be glad to give pupils in these grades a chance to put theoretical knowledge of this sort into actual practice occasionally, but even where this is not allowed the children will gain useful facts that sooner or later will be of advantage.

TABLE MANNERS

Besides making a wise choice of foods, and seeing that those selected are properly prepared for the table, one thing more is necessary in order that what we eat may do us the most good. The meal must be enjoyable.

Experiments upon animals show that food will not digest as it should if the animal is tired, or if he is worried or angry. The same thing is true of people.

A boy may think he can snatch a sandwich or a piece of pie and run out to play, swallowing his food at the same time. If he is a strong lad, he may not feel any bad effects, especially at the time. But he is putting a strain on his digestive organs which they ought not to bear. He may be stunting his growth or impairing his strength for the future in a way that he may never be able to make good. It is not wise to run the risk.

Food digests best when one is hungry. How is this an argument against eating between meals? It digests best when one is happy and cheerful. What should we talk about at the table? What subjects should be avoided?

The surroundings must be pleasant, if one is to get the most good from what he eats. Why does this mean a clean table cloth, clean dishes well arranged upon it, and all food nicely served?

If possible, have a table in some part of the schoolroom with such dishes as most of the pupils have at home, and show them how to set it properly, and how to serve food. If this is not feasible, have each one prepare a diagram on paper showing how his own table at home should be arranged.

Bring out important rules for eating which every one should observe, either for health or politeness. Teach the right uses of knife, fork, spoon, and napkin, if there is any doubt on the subject.

A well known writer on household economics says that building better bodies for better souls is a process long delayed but growing steadily into recognition. Nowhere is it growing faster than in America, and in the public schools.

We are coming to recognize the need, and that is the first long step towards meeting it. The problem will be well nigh solved when the great army of school children, and through them the homes which they represent know what foods to choose and what substances to avoid; how to cook and serve every-day meals in the most nourishing way; and how to eat to get the most good from their food.

AUTHORITATIVE QUOTATIONS

BAD FOOD HABITS DISASTROUS TO HEALTH

It is easy to see one cause of ill-health. The food habits of the people are bad. The use of tobacco and the almost universal use of strong coffee by all ages are great causes of ill health. —*Health Culture*.

FOOD RULES FOR CHILDREN

Allow time for meals. See that the food is thoroughly masticated.

Do not allow nibbling between meals.

Do not tempt the child with the sight of rich or indigestible food.

Do not force the child to eat against his will. Examine the food, which may not be properly cooked or seasoned. If good food is refused, merely remove it and wait until the child is hungry.

In very hot weather, give less food and offer more water.—W. GILMAN THOMPSON, in *Practical Dietetics*.

ALCOHOL NOT A FOOD

Certainly alcohol can not be regarded as an efficacious food for muscles, nerve cells, and the like. Not even in a narrow sense can it take the place of a force-generating foodstuff.

Alcohol greatly increases heat radiation, by dilating the blood-vessels of the skin which become reddened through this increased blood supply. This gives rise to the deceptive feeling

of warmth, but the warm skin gives out more heat into the colder surrounding atmosphere, and the bodily temperature, according to abundant experimental proof, is actually lowered by the ingestion of alcohol.

All the pleasant sensations of physical and mental strength brought forth by moderate doses of alcohol are deceptive, and depend upon paralysis of the critical judgment and upon the momentary blunting of the sensation of fatigue. —ADOLF FICK, M. D., Late Professor of Physiology, Wurzburg.

CAPACITY FOR WORK LESSENED BY USE OF ALCOHOL

The well known experiments of Frey in Sahli's Clinic, Berne, showed that so-called small doses of alcohol (one-fourth to one-half ounce), invariably lessen the capacity of normal muscles for performing work. Others have confirmed and strengthened his results.

Nor must we forget Kræpelin's 1,350 experiments which resulted in showing that all the intellectual functions examined suffered a marked depression after the ingestion of small and moderate, as well as large doses of alcohol.—JOHN MADDEN, M. D.

ALCOHOL ESPECIALLY INJURIOUS TO CHILDREN

There is no known substance which can be compared with alcohol, whether given as a food or beverage, that will more positively destroy the growth and impair

the vigor of the body. Given in childhood, its degenerative effects are more far reaching and more certain than at any other time of life. This damage may be masked, but it will certainly appear sooner or later. Mental disorders and individual peculiarities, marked by faults of nutrition and feeble resisting power to pain and fatigue, with defective reason and power of control in many cases, clearly date back to the damage in infancy from spirits. Digestive disturbances and many forms of nervous diseases have also been found to come from the same cause.—T. D. CROTHERS, M. D.



"When Easter comes, sweet blossoms lift
Their shyly hooded faces."

THE RECOVERABLENESS OF HUMAN NATURE

THIRTY years ago the pupils in the public schools of Massachusetts were the descendants of the Puritans, the Pilgrims, and other English-speaking people who came later to these shores. Today over sixty per cent of the nearly half a million children in the public schools, more than a majority of the future voters of the old Bay State, were either born or their parents were in Italy, Greece, Ireland, Poland, Russia, Finland, Germany, Denmark, Bohemia, Holland, Turkey and other far away lands. Almost every language and race are represented in these schools, while the sons and daughters of Massachusetts are found everywhere west of the Hudson, where they have helped to build the great commonwealths that have added to the glory and strength of our nation, and have helped to reproduce in them something of the Mayflower civilization.

But what of the future of Massachusetts and other states to which this tide of immigration is flowing? As we read that 33,000 immigrants are to land in New York this week, and remember that nearly 1,000,000 came last year and 4,000,000 in the preceding years, we ask, "Is not this an invasion? And what is to prevent the history of other invaded nations being repeated in our land?"

Rome did not found schools for the education of the children of her invaders in Roman principles and spirit. No other invaded nation but America has done it. Will such education make possible the absorption by the republic of this vast incongruous mass, with no loss of national, moral, mental, or physical strength? In searching for an answer to this question, we find one fundamental principle on which we may build with hope. It is what Rev. Dr. Storrs of Brooklyn called "*the recoverableness of human nature under right conditions.*"

As the sculptor sees in the unhewn block of marble the angel he will fashion from it, so the teacher who has true insight sees undeveloped possibilities in the child from another clime who has come to our schools to be fashioned into an ideal American citizen.

While the opposite is also true, the latent germs of all the virtues and graces are in the children of the immigrant, and will respond to skilful appeal. That is what we mean by the recoverableness of human nature. But note, this recoverableness is possible only *under right conditions*. The questions, what are these conditions, and do they exist, are momentous and fraught with national destiny.

Alcoholic drinks are in more or less common and approved use in the countries from which

these new peoples come; that use is one of the causes of poverty and degeneracy in the lands from which they fled, and is here, as everywhere, a bar to the recoverableness of human nature.

Unfortunately, our civilization has not yet reached the era of America with no saloon, hence the immigrant and his children find in this new land the same soul and body-enslaving drinks. If opportunity here to earn more money than in the old world means more to be spent in drink, and more votes for the saloon, the greatest enemy to our free institutions, then every new immigrant is an added peril.

But while we have not yet closed all the saloons and thus removed their temptations, there is one feature of the alcohol question that is peculiar to this country. The law in America requires every public school which the immigrant's children attend to teach these children, with the laws of health, the dangerous nature and evil effects of all forms of alcoholic drinks and other narcotics. This law applies as well to the descendants of the immigrants that came 285 years ago as to those who are today just off the ship. This educational method, if properly conducted, is evolving the sentiment that will banish the saloon.

It is sometimes said that everything in this study depends on the teacher. As much depends on school superintendents and school boards whose duty it is to make out the courses of study, select the books for pupils' use, and order enough lessons to cover the subject from year to year. The teachers will do their part if they are given material to do with, and the time in which to do it.

Do school superintendents, school committees, school directors, and boards of education realize that in making ample provision for this study they are providing for the training of a coming army that will drive out of this land of the free its greatest enemy? Do they realize that history will pronounce such action that of far-seeing statesmen?

Do careless school officials realize that in failing to make the utmost provision for the pursuit of this study, with every possible help, including good courses of study and good books adapted to grade for teachers' and pupils' use, especially in the lower grades, they are thus leaving the enemy to train the home-born and foreign-born Americans now in the making in our public schools, on a question touching one of the most vital elements of our national life?

Never did the conditions of any age call more loudly to school officials for comprehension of the needs of the times, and for patriotism and statesmanship to meet those needs.

History is waiting to pronounce its verdict upon the work of the guardians of this form of

education, as it will be seen in the life and efficiency of the nation during this century.

MARY H. HUNT.

In America, the study of temperance physiology, which includes warning instruction against all narcotics, is compulsory for the pupils in all public schools, and in almost every state for all pupils in all such schools.

The tendency of some school superintendents, in spite of this legal requirement, to relegate this branch to the sixth and even more advanced grades is largely responsible for the cigarette smoking now alarmingly prevalent. Irreclaimable cigarette smokers have all too frequently begun the habit before they got the warning instruction that might have saved them, if it had been imparted through simple oral lessons in the primary years, and had been continued progressively through the grammar grades and first year of the high school, with such helps, including books adapted to grade, as they have in other studies.

The youthful cigarette smoker means a coming degenerate. Anything that will help prevent this fate is of vast importance. The school official who recently said, with a light wave of his hand, "It is a very trivial question whether or not fourth year pupils have books in temperance physiology," recalls President Roosevelt's description of the man unable to distinguish the difference between the important and the unimportant.

HEPATICAS

BY ARCHIBALD LAMPMAN

The trees in their innermost marrow
Are touched by the sun;
The robin is here, and the sparrow;
Spring is begun!

The sleep and the silence are over,
These petals that rise
Are the eyelids of earth that uncover
Her numberless eyes.

We like water better than beer.*



My father's the Sun and my mother the Cloud;
My courtiers, the daffodils, after me crowd:

My voice is the lark's voice, my pace is the
wind's;
I waken the fir cones that in their rough rinds

Sleep, dreaming of summer and skies full of
birds,
And lillies leap upward to hearken my words.

Dark alders behold me and lighten their green,
The bluebells surge upward the braken between.

I am Life, I am Youth, I am all that is dear,
And fragile, and swift in the sweet of the year.

I am hence, I
am gone ere
Earth says
"She is
here."

Blow, daffodil
trumpets,
blow long
and blow
loud—

I am April, the
child of the
Sun and the
Cloud.

In a school-
room the first
primary grade
was listening to

a description of Columbus's first voyage to America.

The teacher reads:—"Queen Isabella sold her gems to help Columbus."

"Now children," she said, "who can tell me what gems are?"

Instantly Robert sprang to his feet, his hands waving frantically and his eyes flashing.

"Well, Robert?"

"Biscuits!" yelled Robert.—*Boston Herald.*

Food is cooked to render it more agreeable to the senses of taste and smell. Cooking develops flavors and odors not present in the raw state, and facilitates the process of mastication. Some foods are tough and hard and can neither be finely divided nor well mixed with saliva. Again, the warmth which is thus imparted promotes digestion by causing an increased flow of blood to the digestive apparatus.—*The Home Doctor.*

*See Primary Lesson. Page 119.

BOOK NOTICES

PHYSIOLOGICAL ECONOMY IN NUTRITION, By, Russell H. Chittenden, Ph. D., LL. D., Sc. D., Professor Physiological Chemistry, Yale University. Frederick A. Stokes Company, New York.

The problem discussed in this book is one of great practical importance because proteid or nitrogenous foods are the most costly, and because their excessive use, may mean serious overwork for the various organs of the body. If the man who thinks he must eat meat three times a day in order to do his work can be convinced that he is thereby imposing an unnecessary burden upon his health and working ability, as well as his pocketbook, the knowledge will be better than a legacy. And to the gouty, prematurely old sufferer from excess of beefsteak and lamb chops the good news ought to be equally welcome, especially as Professor Chittenden avers that one soon takes as much pleasure in simpler foods as formerly in a heavier diet.

The suggestion for these studies came from the experience of Mr. Horace Fletcher, who, a few years ago, through the habit of thorough mastication and insalivation of food, found speedy restoration to health and vigor, together with marked reduction in the amount of food needed to satisfy his appetite. He became an enthusiastic apostle of "the simple life," as applied to eating. Professor Chittenden tried a similar experiment with like satisfactory results.

Among them he records the following: Improved physical condition, disappearance of "rheumatic trouble in the knee-joint which had persisted for a year and a half, and of sick headache and bilious attacks." There was greater appreciation of such food as was eaten, a keener appetite, and more acute taste with a thorough liking for simple foods.

The nitrogen of his reduced diet amounted to about a third as much as was previously taken, 40 grams of proteid food per day, instead of 118 grams the usually accepted standard, and on this diet Professor Chittenden did more work and led a more active life in every way, with greater comfort and less fatigue than formerly.

Besides the details of his own experiments, including daily menus and tables of results, Professor Chittenden's book contains accounts of similar experiments of several months' duration on three distinct types of individuals, eight of his associates in the university, representing mental workers; a detail of thirteen men from the Hospital Corps of the United States Army, representing the moderate worker of different nationalities and temperament; and eight

trained athletes. The results with these twenty-nine individuals of widely varying manner of life were a verification of the experiences of Mr. Fletcher and the author, namely, improved health, working ability, vigor, and endurance on a diet containing about half the amount of proteid food usually thought to be necessary.

The final conclusion of the book is: "Health, strength, mental and physical vigor, and endurance can be maintained with at least one-half the proteid food ordinarily consumed; a kind of physiological economy which, if once entered upon intelligently, entails no hardships, but brings with it an actual betterment of the physical condition of the body."

Not the least valuable feature of the book is the actual menus which show the kinds, amount, variety, attractiveness and palatability of food possible in this reduced system of diet.

A MANUAL OF PERSONAL HYGIENE. Edited by Walter L. Pyle, A. M., M. D., Assistant Surgeon Wills Eye Hospital, Philadelphia. \$1.50 net. W. B. Saunders & Co., Philadelphia.

This is the second edition of a deservedly popular book, revised and enlarged. Its aim is to show how hygiene and physiology may and should be applied to daily living. The editor has chosen eight physicians, each of whom has written upon a phase of the subject in which he is particularly interested, and compiled the results of their work. The whole forms a large amount of useful information on the body and its care. Physiologic details are overemphasized in some cases for the average reader, and in one or two instances the writer seems unfamiliar with the latest experimental evidence; but as a whole the book is a valuable contribution to existing literature on this subject. The chapters on Domestic Hygiene and Home Gymnastics, as well as the Appendix, are particularly helpful.

Massachusetts is indebted to the Committee on International Course of Study in Temperance Physiology for effective help in a critical hour.

PHYSIOLOGY TOPICS FOR APRIL

PRIMARY—Parts of Body Necessary to Life: Head and Trunk. Sense of Taste. Things not to be tasted. How the Body is fed. Kinds of Food. Table Manners.

INTERMEDIATE—Respiration. Skin and Cleanliness. The Body's Need of Pure Air. Body Waste and Repair.

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Intermediate Physiology and Hygiene For Fifth and Sixth Year Pupils, or corresponding classes in ungraded schools. By Winfield S. Hall, Ph.D., M. D., and Jeannette Winter Hall, Special Teacher of Physiology, Berwyn, Ill. Price, 40 cents

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It is a reproduction of the fine photograph of Mrs. Hunt which appeared on the first page of the December JOURNAL. We hope many of our readers will avail themselves of this opportunity to secure one of these excellent pictures of the leader of Scientific Temperance for their local schools.

School Physiology Journal

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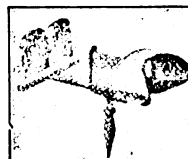
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By MRS. CHARLOTTE SMITH ANGSTMAN

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School Physiology Journal

Vol. XIV

BOSTON, MAY, 1905

No. 9

A SONG FOR TO-DAY

BY LOUISE MANNING HODGKINS

GROWETH the morning from gray to gold;
Up, my heart, and greet the sun!
Yesterday's cares are a tale that is told,
Yesterday's tasks are a work that is done;
Yesterday's failures are all forgot,
Buried beneath the billows of sleep;
Yesterday's burdens are as they were not;
Lay them low in the soundless deep.

Share thy crust and ask no dole,
Offer the cup thou wouldst never drain;
Only he who saveth his soul
Loseth all that he fain would gain.
Smile with him who has gained his day;
Smile the gladder if, at thy cost,
It was his to win and thine to aspire;
It is his to-day who loved the most.

Pluck the flower that blooms at thy door;
Cherish the love that the day may send;
Cometh an hour when all thy store
Vainly were offered for flower or friend.
Gratefully take what life offereth,
Looking to heaven, nor seeking reward,
So shalt thou find, come life, come death,
Earth and the sky are in sweet accord.

HOW THE TWENTIETH CENTURY MAY BRING EMANCIPATION FROM ALCOHOL

BY MARY H. HUNT

SLOWLY through the ages human progress has made its way, sloughing off in each century some form of tyranny, and with each cycle of years gaining some new vantage ground as truth has been discovered and made known.

Progress may be defined as escape from the false traditions of the past and their consequences.

What, in this respect, will the twentieth century do for the human family?

MODERN SYMPATHY SEEKS TO REMOVE THE CAUSE OF SUFFERING

The false idea, descended from prehistoric times, that alcohol is a good creature of God, benevolently designed for human comfort and help, is responsible for more crime, poverty, misery, madness, and individual and national

decadence than all other causes combined. It means something to the future that this fact is now to some extent realized, for when misery finds a voice there is hope.

Although human sensibilities have become to some extent blunted by the constant sight of the misery due to alcohol, which has been regarded as inevitable and due to the weakness of the drinker, it is true that twentieth century sympathies, while not less active in relief of human suffering, more than ever before inquire for and try to remove its cause. This search for causes has led during the last thirty years to extended and exhaustive scientific investigations in the laboratories of the world as to the nature of alcohol and its consequent effects on human life.

SCIENCE REVEALS THE NATURE OF ALCOHOL

Scientific research has proved beyond cavil that alcohol, instead of being as people supposed a valuable and safe drink if moderately taken, is in reality a narcotic poison which has the power when continually used, even in small amounts, to create the uncontrollable craving for more that may eventuate in the individual and race deterioration and consequent misery that it is the nature of alcohol to produce.

In other words, science shows that the evils of intemperance are due to the nature of the drink, rather than to the weakness of the drinker. It also teaches, as has been so well said by Professor Gruber of Munich, that "while some persons seem comparatively unsusceptible to alcohol, whether or not one is susceptible can not be foretold; he finds out only by playing a game of chance with his life, which is a dangerous experiment."

The testimony of science that alcoholic beverages are a cause of race deterioration in impairing physical, mental, and moral ability is constantly accumulating.

Hence, as the popular use of alcoholic drinks is the greatest peril facing our twentieth century civilization, the question for the thoughtful lover of humanity is, shall this civilization be limited, blighted, and ultimately destroyed by a chemical poison which the people are drinking through ignorance of its real character and the danger of beginning its use?

A PERILOUS MISTAKE THAT MUST BE CORRECTED

This mistake of the people in thinking that alcohol in any form and amount is a safe beverage

age is the beginning of this peril. As long as they believe it is safe they will drink it, because they like it, and consequent ruin will follow. This mistake must be corrected by education as to the facts; education that will reach *all* the people in the plastic period of childhood before appetite for alcohol is formed. After such a craving is established, we come too late with our warning instruction.

The world has learned by long and bitter experience what science confirms concerning the tenacity and strength of the alcohol craving, combined with the power of this substance to weaken the will that should control it. It is folly to talk of self-control in the use of a substance whose nature it is to destroy self-control.

THE POWER OF TRUTH

The events that in the perspective of history are seen to have been greatest in their influence on the lives of nations have not been so much reigns of kings and wars of conquest, as the decisions that have given the truth to the people. The imperial order of the sixteenth century that gave the open Bible to all England, meant more than almost any other event in English history to that country and to the subsequent English-speaking world.

In the thirty-second verse of the eighth chapter of John there is a marvelous promise to those who "continue in his word":

"Ye shall know the truth, and the truth shall make you free."

There is here the promise that truth shall reach individuals and nations that "believe" and continue in the word, and that such truth shall mean freedom from the perils that result from lack of knowledge of the truth.

Often unrecognized at the time, but seen in the movements of history, there is manifest something more than human force that has guided the march of truth through the ages.

A PHENOMENAL MOVEMENT

We are too near it now to recognize its full import, but the Christian scholar who shall write the philosophy of the history of the twentieth century from the standpoint of human development will see something like the invisible but controlling power of him who said, "I am the truth", moving and guiding the 15,000 physicians of England, Scotland, Ireland and Wales, practically the entire medical profession of the United Kingdom, who one year ago almost simultaneously signed a petition for the physiological education of all the children of those countries against alcoholic drinks. It is phenomenal, without parallel, except in the legislative action in this new land of state after

state, forty-five in all, and the National Congress, which has put 22,000,000 American children of school age under temperance education laws.

The time is evidently approaching, somewhere in the history of this new century, for the eviction of alcoholic drinks from human habits and traffic. These drinks have been tried at the bar of science and experience and unqualifiedly condemned.

The truth is revealed. That part of the promise is kept to us. But we are to be its almoners. God never does our part. What that part is concerning this truth is the practical question for this hour.

WHAT SHALL BE TAUGHT

The civilized nations seem to be agreed that the public schools shall be the medium for spreading the truth on this subject, because they are under public control and reach the largest numbers. The pending questions now are, what shall be taught, to whom, and by what methods or instrumentalities.

The Committee on Physical Deterioration in its report to Parliament, July 10, 1904, said: The Committee believe that more may be done to check the degeneration resulting from drink by bringing home to men and women the fatal effects of alcohol on physical efficiency, than by expatiating on the moral wickedness of drinking."

For the pupil to understand the "fatal effects of alcohol on physical efficiency", he must know something about the physical structure of his body; for instance, that he has a brain and nerves, and something of the normal action of each, in order to understand how alcohol and other narcotics, impure air, and unhygienic habits will injure those organs, and thus his power to work.

Hence, some knowledge of the structure of the body, or physiology, is an essential basis for the study of hygiene which includes the study of the effects of alcoholic drinks upon "physical efficiency." In other words, the science of temperance is the physiological reasons for obeying the laws of health that teach abstinence from alcoholic drinks and other narcotics, and is closely related to other laws of hygiene. The subject is a large one, capable of amplifications and subdivisions that will furnish new and interesting matter for the guidance of the child during the habit-forming years of school life.

In answer to the question, what shall be taught, we reply: The fallacies that lead to the use of alcoholic drinks must each and all be met by the scientific truth that refutes them if this teaching is to prevent intemperance.

For instance, the fallacy that alcohol is a special provision of God for human comfort, which is a prime cause of its use. This must be met by the findings of science, that it, alcohol, is a product of fermentation that changes a food to a poison. We have seen that enough physiology is needed in this subject to show that human life is based on definite laws. The physiological effects of alcohol upon the various organs of the body and the consequences of disobeying other laws of health, if taught in connection with the description of those organs, have been found to be the most logical order of presentation; consequently this plan gives the best results.

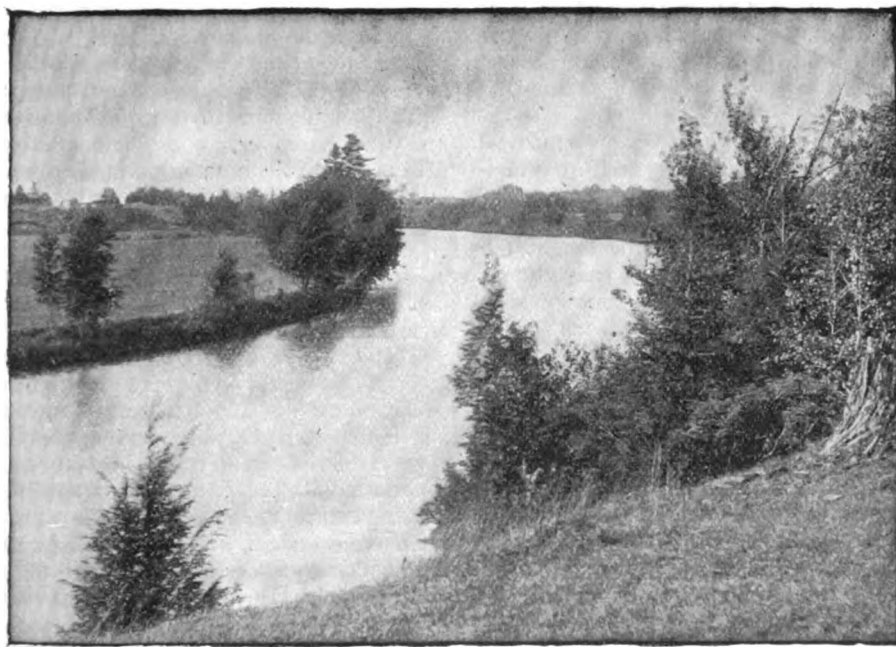
From the first, those leading this movement

consequences of broken natural law can not be averted.

NECESSARY MEANS FOR TEACHER AND PUPIL

The facts constituting this science are derived from many other sciences. Among these are anatomy, physiology, hygiene, chemistry including fermentation, therapeutics, toxicology, bacteriology, pathology, psychology, and pedagogy with child study.

No teacher can roam over so vast a field to select and secure the necessary matter for each lesson, and adapt it to the comprehension of his special pupils; hence, the supreme importance of a carefully graded syllabus of topics showing what should be taught each year, and



"Groweth the morning from gray to gold;
Up my heart, and greet the sun!"

in America have said, "This instruction for the children of this nation must be as radical as the whole truth. There must be no attempt 'to heal slightly the hurt of the daughter of my people.'"

Futile will be the endeavor to avert the individual and race deterioration that inevitably follow in the wake of the use of alcoholic drinks, if scientific temperance teaching in the public schools is confined to warnings against the excessive use of distilled liquors, and the great fundamental fact is ignored that alcohol is a narcotic poison, having the power, when taken *even moderately* in the fermented liquors as wine, beer, and cider, to create an uncontrollable and destructive appetite for more. The

of graded manuals of instruction containing necessary truths concerning those topics.

The distinguished British Committee, Sir William Broadbent, chairman, representing the 15,000 medical petitioners for this study, have recommended and sent out a syllabus of topics on this subject for the schools of the United Kingdom based on the American Course of Study.

This American Course is the result of twenty years' experimental study of what must be taught, how it should be taught, and to whom, in order to secure a nation of strong, achieving people, and insure for them a future of intelligent sobriety.

Now let these same physicians see that there

is provided for all pupils able to read in the public schools of England, Scotland, Ireland, and Wales, graded series of text-books that will tell the pupils in each form or standard what the truths are that they should learn concerning the topics specified in the syllabus for that standard. As already intimated, it is useless to expect teachers to teach this subject successfully, unless pupils able to read have progressive manuals of instruction in their own hands. Error and inadequate information result without such authoritative sources of instruction for the pupils. Manuals of instruction are also an effective method of educating the teacher in this, to him, new study.

Instruction in the primary years before pupils are able to read must of necessity be oral. But the primary teacher should have as a guide in this study an oral lesson book well illustrated with stories and pictures, and containing such lessons as will interest and instruct the child.

It is to be hoped that Great Britain's medical men, with their wide knowledge and opportunities for keeping abreast of scientific investigations, will constitute themselves a guard of honor for the truths that are to be taught the children, and that they will not let pass without effective public challenge and correction any attempt to include in these school text-books erroneous statements or half-truths that condone or recommend moderate drinking.

WHO SHOULD BE TAUGHT

When should this instruction begin? As its object is to guide in the formation of right physical habits, it should begin as soon as the school can reach the child, for he is forming new habits each year, and by every law of child nature and every principle of education instruction that is to shape habits must begin and keep pace with habit formation. This does not necessitate senseless repetition, nor teaching little children difficult subjects in long, technical words, but it does call for simple truths which the little child can understand, and the addition of new facts each year. Such instruction will mean graded, progressive information adapted to the child's developing comprehension, beginning with and continuing through the three primary and five grammar grades or standards. In America, the subject is completed in the first year of the high school.

MINIMUM NUMBER OF LESSONS

How much time will this study take in the already crowded curriculum? By careful experimental computation we in America have found that a maximum of 290 lessons below the high school, distributed through the three

primary and five grammar school years will cover the subject without repetition other than is necessary for review, and this is the number of lessons the best laws in America specify.

That this is not too many lessons is evident from the fact that from 600 to 900 lessons in geography are often given in the same time.

It is certainly as important to the child and to the state that he should know why he should not drink beer as to be able to name every river in China.

MINIMUM TIME

These lessons should average from 10 to 15 minutes in the primary and about 30 minutes in the grammar grades, amounting in all to about 112 hours distributed through eight years below the high school, 12 hours in the primary and 100 in the grammar classes.

This is the time we estimate for the whole subject, physiology, hygiene, and temperance.

The temperance matter, including tobacco and other narcotics, we estimate at about one fifth of the whole, amounting in all to about 22 hours to be distributed through 8 years. On this basis, the more recent laws in America now require the text-books for lower grades to give one-fifth of their space to the treatment of alcoholic drinks and other narcotics, those for high schools twenty pages.

The reason for the larger proportion of time given to physiology is that the more clearly the child understands and is interested in the working of his bodily machine the keener will be his appreciation of any damage done to it. Thus when the older pupil has learned something of the fine control exercised over the muscles by the nervous system, he will quickly see the disastrous consequences of benumbing the nerves with alcohol. He will understand at once why the workman can not accomplish such good work nor so much of it, when his nerves are even slightly weakened by drink. This of itself constitutes an appealing argument which the child will remember.

We have found that we get better results when this study is pursued consecutively at the rate of three lessons per week for ten weeks in the primary and four lessons per week for ten weeks in the grades above, than when only one lesson per week is given running through the whole school year. The subject is thus kept fresh in the mind while it is being developed, and less time is required for recalling and reviewing. With one lesson a week pupils are liable to forget the points of the last lesson and thus lose their interest.

A DEFINITE PLACE IN THE CURRICULUM

If we are to expect definite results from this

study in shaping the lives of individuals and nations; there must be a definite time and place in the curriculum for enough lessons to cover the subject. The scheme of study should be so planned that every child in all the standards of all the public schools will get this progressive instruction from year to year as he is able to comprehend it.

An American teacher recently said, "Incidental teaching is apt to be accidental." Accidental teaching concerning such an enemy as alcohol will not save a nation from its ravages. We are quoting in America Sir Victor Horsley's recent saying:

"We ask only that the laws of health coupled with the subject of temperance be regarded as on all fours with a subject like history, and if there is to be a reorganization of the time table it could be perfectly well done by teaching a little less history."

"We do not want any indirect treatment of this subject, for that is not the way to approach one of the great subjects of the nation."

"The medical profession has adopted in very large measure the American system and is united on this line, namely, that there must be this teaching, that every child ought to receive it, and therefore that it must be of the nature of compulsory teaching."

Tests or examinations for promotion have been found, in America, to be an important matter, because teachers and pupils will take more interest and put forth more effort in a study in which promotion for the pupil depends upon passing an examination.

OPPOSITION FURTHERS THE SPREAD OF TRUTH

In America, attempts to minimize the truth and the extent of this teaching are not infrequently made by those influenced by appetite and interest. Such attempts have resulted in defenses and discussions that have been widely

educational in favor of total abstinence. This was notably so in the case of the *Report of the Committee of Fifty*, a two-volumed effort to overthrow the compulsory physiological total abstinence teaching given in the public schools.

The *Report of the Committee of Fifty* was so unjust in its attack upon scientific temperance instruction, and its purpose to break down with false accusations a system of education upon which the American people depend for a future citizenship of intelligent sobriety was so obvious that the United States Senate, on motion of Senator Gallinger, M. D., voted unanimously, February 27, 1904, to make a Government Document of the *Reply*, a pamphlet which points out the falsities and absurdities of that part of the *Report of the Committee of Fifty*

which attacks scientific temperance instruction. This document has also been widely used by scholars, physicians, lawyers, clergymen, in defense of total abstinence as they have had opportunity.

HOW TO GET THE STUDY INTO THE SCHOOLS

That is the next practical question. The petition signed by your 15,000 physicians will

be a powerful argument. The moral sentiment of every community will have to be brought to bear upon the local school boards, objections answered, and persistent efforts kept up in each locality until it is done. Every failure will be an evidence of the need of an act of Parliament to make the study of this subject a permanent part of the school code of the United Kingdom.

THE FEDERATION OF THE WORLD AGAINST ITS GREATEST ENEMY

About twenty-five years ago, one of England's great men of science in an address given in Oxford, after describing his conversion to total abstinence as a result of his experimental laboratory study of alcohol, said:

"If I can be moved by this new light to see actual truth and to be influenced by it, so can



"Sing ye! join the chorus gay!
Hail this merry, merry May!"

all . . Especially would I urge that the young should be thus impressed; that in every Board school of England there should be a class beyond the three R's,— a class where the claims of temperance should be impressed on the scholar with all the force of scientific instruction. If, from the present conference, this one suggestion can find its way into practical working, we shall not have met today in this great seat of learning in vain."

This appeal from Dr. Richardson found an echo in the new world, where his advice has been put to the test on a mammoth scale and found to be good. America's public schools have "classes beyond the three R's which are being taught temperance with all the force of scientific instruction." This instruction is permeating and shaping the destiny of the nation.

His Majesty, King Edward VII, is said to favor an Anglo-American alliance. In no other direction could an alliance do more for the strength of both nations than for each to contribute its quota of experience and science for the overthrow of alcohol, through legally required compulsory scientific temperance instruction for all pupils in all the public schools of both nations. Not far in the future there may be a triple alliance, with Germany also joining hands in the same beneficent effort.

It seems not improbable that the rapidly rolling years will ere long bring a federation of all the nations in a campaign of scientific temperance education against alcoholic drinks and other narcotics. When that comes the final overthrow of alcohol, the world's greatest tyrant, is sure, and as surely will the twentieth century witness the coming of the day of the clear brain, the strong hand, the true heart which will usher in the Kingdom of the Highest.

Read before the National Convention for the Promotion of Temperance Instruction among the Young, Greenock, Scotland, March 24, 1905.

CIGARETTES AND HEART DISEASE

THE statistics in regard to heart disease among boys, caused by the use of cigarettes, are simply appalling. One hundred and fifty boys were recently examined in Chicago as to their physical qualifications for positions on the various high school athletic teams and nine-tenths of them were rejected because of the tobacco heart. It is probable that a large proportion of the boys examined were not smokers.

In a preliminary examination for West Point, one-fourth of the candidates were rejected for the same cause. The army and navy records present a fearful list of heart failures from the same evil habit.

It is also a fruitful source of insanity, as many medical men testify. Every teacher of boys can adduce instances of lads ruined mentally, morally, and physically by the terrible habit grown into a vice. The cigarette fiend is the boy who has become a complete slave to his appetite. Ninety-two per cent of the boys in the Pontiac reform school are cigarette smokers, and the majority of these are "fiends." The reform schools for girls show similar facts. —PRINCIPAL BOLTWOOD in the *Advance*.

Lady (to applicant for position of nurse-maid): "Why were you discharged from your last place?"

Applicant: "Because I sometimes forgot to wash the children, ma'am."

Chorus of Children: "O, mamma, please engage her!—*Tit-Bits*."

WE HAPPY POOR

BY RUTH ALLEN BENEDICT

A PERFECT day, a gem of days,
Isset in the year's crown for me.
Would it be richer were I rich?
What more than perfect could it be?

Oh, clouds that fleck the deep blue sky
And stir with every wandering breeze,
Would I be happier did I know
That you were passing o'er my trees?

It needs not wealth to comprehend
That May is here and June at hand.
The season's pageant is a show
Free to the lowliest in the land.

For me, I do not have to toil
With gardeners, florists, and the rest,
For me the first May blossoms spring,
My woodland treasures are the best.

I claim the ground I press as mine,
The primal heritage of man,
All things are ours, did we but know
The lavishness of Nature's plan.

There are no bounds to my domain,
No woods or hedges prison me,
The wide horizon bounds my land,
My kingdom's all that I can see.

Others may guard their title deeds,
And own indeed the outward part,
Why should we envy, if we may
But bear its beauty in our heart?

All things are ours, we fortunate
Securely may the world defy.
Ours is man's heritage of joy,
The kingdom of the seeing eye.



Primary Lessons

THIRD YEAR

THE HEART AND BLOOD

IN taking up these topics, we are dealing with organs that are concealed within the body and that can not be seen or touched by the children.

This is a handicap at the start, but it can be overcome by the skillful teacher and lessons on the heart and blood made as interesting to young pupils as talks on the external and visible parts of their bodies. Indeed, the touch of mystery involved in talking about organs that are out of sight often makes the work more attractive.

Here, as always, we must begin with the known. Every normal child in this grade knows that he has a heart. He has laid his hand over it and felt it beat. At some time or other, also, he has cut his finger and seen the red blood gush out.

These universal experiences lead directly to the questions: What is the heart for? Why do we have blood in our bodies?

When the child has learned what he can understand of the wonderful work of these parts of his body, he is ready and anxious to know how they should be cared for to keep them strong and healthy and able to do the best possible work. Last of all, he needs to find in what ways they may be harmed, that he may not make a mistake and do anything to injure these important organs.

(1)

THE BLOOD A FOOD CARRIER

Study of the blood and heart naturally follows lessons on food and digestion. In the present lesson, therefore, it is taken for granted that the children have already had class talks on those subjects and are now ready to learn how the food they eat gets from the mouth and stomach to every part of the body that needs it.

The teacher will perhaps begin in some such way as this:

We found yesterday that every part of our bodies needs food to make it grow. But the food we eat goes into our mouths and stomachs.

How does it get to our hands and feet and to all the other parts of our bodies after we have swallowed it?

Let us think first how we get from one place to another when we want to travel.

Ask some of the children in the class who have been on a journey to tell how they went, —whether by steam or electric cars, in a wagon or automobile, or by boat.

There are no cars or wagons in our bodies to carry the food from place to place, and no rivers or lakes for it to sail on, but there is a stream of something always flowing through the body, and this takes the food wherever it is needed.

When you cut or prick your finger or any other part of your body some of this stream runs out. What is its name?

It is not water, and does not look like water. What color is it?

Every boy and girl who lives in a city knows how the water that people use gets into their houses. It comes through pipes, and runs out when they turn a faucet.

The blood stream in our bodies flows through pipes, too. Some of these pipes are quite large, and others are so very small that you could not even see them unless you looked through a magnifying glass.

If you look at your hand you can see some of them through the skin. These are about as large as a knitting needle. By and by we shall find out what makes these little pipes look blue.

It takes a great many blood pipes to carry enough food so that every part of the body will get as much as it needs, and the very smallest ones lie so close together that you could not put even the point of a very fine needle between them without piercing one or more.

Because some of the blood pipes that carry food through the body are so small, you can see that the food too has to be made very fine, or it would fill these little pipes so full that the blood could not move.

Where is the best place to make our food fine?

There is only one part of the body that has teeth, and we must see to it that the mouth does not shirk its work when we eat, but grinds up all the food we put into it as fine and small as it can. Then it will be easy for the stomach to do its part in getting the food ready for the blood to carry.

(2)

THE BLOOD A PURIFIER

Besides carrying food to all parts of the body, the blood has a great deal of other work to do.

As it travels from one place to another it picks up little wornout particles of the body that need to be got rid of, just as a good house-keeper picks up all the rubbish she may find in any room in her house.

The blood pipes that carry this waste matter are called veins.

Some of the veins are so close to the surface that we can see them under the skin. Who can find a vein in his own hand? Where else can we see a vein?

Let the children trace the course of some of the most prominent veins in the hand and arm and forehead as far as they can.

What is the color of the veins? What is the color of your blood as it runs out when you cut your hand? Tell the children that the reason the blood in the veins looks dark and bluish is because it is mixed with so much waste matter from different parts of the body.

There must be some way to clean this dirty-looking blood and get rid of all the wornout particles of the body that it carries, or we should all get sick.

What does your mother do when the house still looks dusty after she has swept and put it in order?

You have all seen her open the windows and doors to let the fresh, pure air blow through the rooms, and you know how sweet and clean they smell afterward.

We can clean the blood in our bodies in the same way.

There are two sets of windows in our bodies, one to see out of and one to let the air in. Point to the windows through which the pure air can get into our bodies. There is no glass in these windows, and they are open all the time to keep our bodies well aired.

The next thing we want to find out is where the pure air goes after we breathe it into our bodies through these windows.

Let us all rise and stand as tall as we can.* Put your flat hands on your chest and take a long breath.

What part of your body moves? What makes your chest move? Does it grow larger or smaller when you breathe in as much air as you can? Why does it grow larger?

A great many little blood pipes go the lungs, the part of our bodies that makes the chest swell out when we take a long breath. Every one of these blood pipes carries to the lungs some of the dark, dirty blood it has collected in the body, and the pure air it finds there cleans it up at once and makes it again a beautiful bright red.

Then it is ready to be sent all over the body once more, and wherever it goes it carries some of the pure air it got in the lungs, making every part feel bright and fresh.

(3)

THE HEART A PUMP

There has to be something in our bodies to keep the blood moving in all the little pipes that take it from one place to another, carrying to each the food and pure air it needs, and taking away the waste particles that need to be got rid of. We must find what this something is.

How many of you have seen a pump? What was it used for? Perhaps it was over a well, and when it was used it drew the water to the surface from a long distance under the ground.

Every one of us has a kind of pump in his own body. It pumps blood instead of water, and sends it all over the body, to the very top of the head and way down to the tip of the toes.

It works just as well in a man who is six feet tall as in a tiny baby, and it never stops as long as we live.

We can not see this busy little pump, but we can feel it beat as it does its work. Which of you can find this little pump that I am talking about in your own bodies?

Show the children just where to place their hands, if they can not do it without help.

Every time we put our hands over the heart we find it hard at work. It does not stop when we go to sleep, or when we are too busy to think anything about it. Is it not a faithful little servant?

Another wonderful thing about the heart is that it can do two things at the same time. It sends impure blood through little pipes to the lungs to be made clean and pure again, and it sends fresh, pure blood all over the body.

It can do this because it is really like two hearts fastened together. Both of them are about as large as your fist.

Draw a picture of the heart on the board, coloring the right side blue to represent the impure blood ready to be sent to the lungs to be made clean, and the left side bright red to represent pure blood ready to be pumped all over the body by the heart.

The children may copy the sketch for a drawing lesson, using colored chalk or water colors.

(4)

WHAT WE CAN DO FOR THE HEART AND BLOOD

If we tried, we could not do the work either the heart or blood does for us every day, but we can make it easier for them to do their work for us.

One thing we can do to help is to give them a chance to rest when they are tired.

*See picture on opposite page.

Have the children place their hands over their hearts and feel them beat as they sit quietly at their desks. Now let them run as fast as they can for a short distance, and then place their hands again over the heart.

Does it beat slower or more quickly than before? Every time we run or jump or take any kind of exercise we give the heart extra work to do.

This does not hurt the heart. It does it good if we are well, but it needs a chance to rest afterward.

The heart rests a little between every two beats; it never stops entirely. When we are asleep it beats more slowly than when we are awake, and thus gets more rest between beats.

This means we ought to go to bed early, to give this busy little worker a chance to rest as much as it can after its work during the day.

What can we do for the blood which does so much for us? We can give it good food to carry to every part of our bodies, and all the pure air it needs.

Find what the children think is good food, and correct any wrong ideas they may have.

Bring up the candy question, and find what sweets and how much the children are eating.

Tell why cheap candy is harmful. It is often made of impure and injurious substances which hurt the body instead of helping to make it strong.

If one can not afford good candy it is better to eat sugar or honey, and in any case only a little is needed.

Take up other foods of which children are likely to eat too freely, and talk about them in the same way, showing that the blood is hindered in its work if too much of any kind of food is eaten.

Tea and coffee do not help the blood do its work. They do not help the body grow or make the body stronger. What better drinks can we think of that do give the body just what it needs?

There are other drinks that are very bad for

the blood and the heart. They make the heart beat too fast. Sometimes they thicken the blood so it can not flow easily through the little pipes, and sometimes they make it too thin.

Do you not think such drinks are pretty good things to leave alone? Now we must know what they are. I will write their names on the board for us all to remember.

Beer is one kind of drink we must not touch. Wine is another. Cider is another. All of these drinks have alcohol in them, and the alcohol is what hurts the blood and the heart.

There is something else that weakens the heart that we need to know about. Something that boys sometimes light and put into their mouths. Who knows what it is?

Perhaps they think it will make them more like men to smoke cigarettes, but it never does. It is much more likely to give them poor blood and weak hearts and keep them small and thin and sickly. The boy who wants to be tall and strong and healthy never begins to smoke.



"Let us all rise, and stand as tall as we can."

AUTHORITATIVE QUOTATIONS

ALCOHOL DESTROYS RED BLOOD CORPUSCLES

Alcohol poisons the blood, arrests development, and hastens the decay of the red corpuscles, there being also a loss of power, by a decrease of vital-

ity in the blood discs, to become red when exposed to the air in the lungs.—DRS. VIRCHOW AND BOECKER.

ALCOHOL TENDS TO HARDEN THE BLOOD-VESSELS

Alcohol acts detrimentally upon the blood corpuscles and fibrinous elements of the blood, producing a ragged or cogwheel margin of the former and ready coagulation of the latter, with hardening of the coats and consequent loss of elasticity of the blood-vessels, thus producing the most favorable conditions for plugging of the capillaries.—C. D. DOWKOUTT, M. D.

ALCOHOL LEADS TO DISEASE OF THE BLOOD-VESSELS

Whenever alcohol is imbibed it leads to

sudden and unnatural expansion of the systemic blood-vessels, with an increased and uncalled for flow of blood to the organs, which unduly excites the functions of these organs for the time being, and which is followed by a corresponding reaction. If this vascular excitation is often repeated, a time must inevitably come when structural changes will occur in these overwrought blood-vessels and in [the organs they supply, and thus the foundations of disease are laid—disease which progresses slowly it may be at first, but nevertheless surely, until the victim is a helpless wreck, like some shattered ship on a lee shore.—RINGROSE ATKINS, M. D.

ALCOHOL OVERWORKS THE HEART

It has been supposed by many that because alcohol increases the number of heart beats that organ is doing a larger amount of work. On the contrary, the vaso-motor paralysis reduces blood resistance in the vessels, and the weaker the heart gets, as a *rule*, the more frequent are its beats; in fact, the quickening of the beats means not increased energy, but the embarrassment of weakness.—PATRICK W. O'GORMAN, M. D.

ALCOHOL TENDS TO HEART DISEASE

Alcohol plays an important part in the production of affections of the heart and blood-vessels,—cardio-vascular disease as it is called.—T. K. MONRO, M. D., AND J. WAINMAN FINDLAY, M. D.

Sir Thomas Barlow has recently declared that port wine was not, as was supposed, the milk of the aged; it tended to produce cardiac weakness, muscular and rheumatoid pains, and deterioration of the fine arterioles and blood-vessels.—*British Medical Journal*, Apr. 1, 1905.

TOBACCO CAUSES OVERWORK OF THE HEART

Professor F. L. Washburne, of the Oregon State University, finds from his experiments with the sphygmograph that while the normal pulse beats 17 times in one revolution of the cylinder, while the person is smoking a cigarette it beats 22 times. What wonder that the general health is interfered with by such abnormal work being forced upon the heart.

TOBACCO IMPAIRS THE ACTION OF THE HEART

Tobacco impairs the action of the heart, renders vision uncertain, deranges hearing, causes vertigo.—DR. STILLE.

TOBACCO IMPAIRS TISSUE

Tobacco contracts the minute vessels of the arterial circuit, resulting in impaired nutrition, especially of nerve centers; by causing irregularity in the supply of blood, it *degrades* tissue.—SIR B. W. RICHARDSON, M. D., F. R. S.

SMOKER'S HEART

Smoker's heart is a disease recognized by all physicians, and is far more common than is supposed. The action of the heart is so uniformly altered that a skilful physician would scarcely fail to detect out of one hundred men all who smoked to any extent daily, simply by putting his ear to their chests.—CHARLES H. SHEPARD, M. D.

SAVED HIS HAND

A young laboring man was brought to a certain hospital with a badly lacerated hand. He had fallen upon an old cotton hook, and it had gone entirely through the palm of his hand carrying with it rust and dirt. The wound was kept open so it would suppurate freely, and be readily cleansed.

As time passed on the hand became very much swollen, turned black, and the surgeons watched carefully for signs of blood poisoning, fearing that the entire hand would have to be amputated to save the life of its possessor.

These signs not appearing, it then became a question whether more of the hand could be saved than the thumb and first two fingers. As the hand became no worse, the surgeon delayed operating on it, and after a time it began to mend, and finally healed entirely.

"Young man," said the surgeon to the patient, as the danger was passing away, "do you use alcohol in any form?"

"No, sir."

"Do you use tobacco?"

"No, sir."

With a wave of his hand and a nod of his head, the surgeon murmured,

"That is what has saved your hand."

—*Temperance Cause*.

"A joy for every day
That stirs the heart to count its joys in May!
Now Fear and Doubt take flight,
Borne down the season's stream;
Grief grows a shape of light,
And melts a tender dream!
Now but to be alive is boon supreme—
A joy for every day in joyful May!"

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"The valley rings with mirth and joy;
Among the hills the echoes play
A never ending song
To welcome in the May."

SPECIAL POINTS IN SCIENTIFIC TEMPERANCE INSTRUCTION

PRESENT instruction concerning the nature and effects of alcohol upon the human system, as found in the indorsed school physiologies, is based upon the findings of modern scientific investigation. This teaching has not always been correctly represented in the criticisms that have been made upon it, and recently the objection has been raised that some of the points emphasized are not yet "settled."

ALCOHOL A POISON

The present teaching of the indorsed physiologies in regard to alcohol is that it is a poison, because it corresponds to the established definition of a poison, and because it is so classified in standard works on poisons almost without exception. One of the recent treatises on poisons, that of Winter Blythe, says, "If we were to include in one list the deaths indirectly due to chronic as well as acute poisoning by alcohol, it would stand first of all poisons in the order of frequency."

Certain alcohol defenders have recently started the claim that "In small quantities, alcohol is not a poison." This is contrary to the teachings of writers on poisons, medical jurisprudence, and other branches of medicine. Dr. B. W. Richardson taught that the nature of a substance depends upon its quality, not its quantity. Dr. R. K. Koppe, in his report to the Russian Commission, said, "The chemical nature of a substance can not change with the quantity." Casper's *Forensic Medicine* relates a case of poisoning tried in the higher courts of Germany where it was held that "A poison is any substance which from its quality alone is

fitted to injure health. The amount given does not enter into the consideration."

ALCOHOL A NARCOTIC

The present instruction as given in the indorsed physiologies affirms that alcohol is not a stimulant but a narcotic. This is in accordance with the teaching of Professor Schmiedeberg, Director of the Pharmacological institute at Strassburg and for many years co-editor of the *Archiv für Experimentelle Pathologie und Pharmacologie*, and of Professor von Bunge, author of the standard, classical work on Physiological Chemistry and professor of that subject in the University of Basel, Switzerland. Among the medical men in this country who are now teaching in accordance with this opinion are Professor Cushny, of the University of Michigan, and Professor Abel of Johns Hopkins University, who says, "Alcohol as such, that is, when it is introduced into the circulation with the avoidance of local irritation, is not a circulatory stimulant."

ALCOHOL NOT A FOOD

The indorsed physiologies affirm that alcohol is not a food, using the word in the sense in which people ordinarily understand it, not in any so-called "academic" or "technical" sense. In this, the instruction is and has been in accord with the teaching of the highest medical authorities, from that of Professor Fick, of Wurzburg, who taught that although alcohol is oxidized in the body it is not therefore food, down to the latest utterance of scientific opinion on this subject, that of the English Committee on a course of study for the schools of the United Kingdom. This Committee included in their list of topics, "Alcoholic drinks—why not classed as foods."

ALCOHOL NO AID TO DIGESTION

The present instruction, which is entirely from the hygienic standpoint, and therefore foreign to prescriptions for the sick, seeks to correct the popular idea of taking alcohol at meals "as an aid to digestion." It shows that the most careful experimentation, such as that of Professor Chittenden of Yale, has demonstrated that alcohol retards instead of hastens digestion. Hence, the idea of taking it as an aid should be corrected. This warning is also especially necessary since other medical writers agree with Professor Bracken of the University of Minnesota, who says in the *International Clinics*, Oct. 1898, "The more or less constant use of alcohol will produce congestion of the mucous membrane, and faulty gastric secretion."

VARYING EFFECTS OF ALCOHOL

The indorsed physiologies make no attempt

to teach the consequences of taking alcoholic liquors "in excess," because no one can tell what "excess," is, and the term implies that there is an amount that is not too much. They teach, as does Professor Welch, of Johns Hopkins University that, "In one way or another most of the organs and tissues of the body may become the seat of morbid changes attributable to alcohol." They do not state how much alcohol is necessary in every case to cause these diseases, because the amount varies with the individual and with different conditions of the same individual. Neither do they state that all these diseases appear in each and every victim of alcohol; but they show, as does the late Professor Martin of Johns Hopkins University, that while "Probably no one individual ever suffered from all the diseased states produced by alcohol, all habitual drinkers, sooner or later, experience one or more of them."

THE MOST MODERATE DRINKING UNSAFE

The indorsed physiologies show that the most moderate use of alcoholic drinks is unsafe, because alcohol has the power to create an almost irresistible craving for more.

This fact is so generally admitted by the medical profession that it is superfluous to mention authorities; but one of the most recent utterances on this point is so clear and emphatic that it is worth quoting. The *Boston Medical and Surgical Journal*, February 18, 1904, contains an article by Professor Benedict, of Wesleyan University, on "Scientific Aspects of Moderate Drinking," in which he quotes a physician with a large practice, an instructor of twenty-five years standing in one of our largest medical schools, as saying, "Any amount of drinking, no matter how small, invariably tends to form habit which inevitably tends to increase."

SUCCESS JEOPARDIZED BY ALCOHOL

The present instruction aims to be, not merely theoretical, but practical. Hence, it presents evidence to correct the fallacy that pre-

vailed extensively a few years ago, and still holds among the less well informed, namely, the false idea that alcohol will help a person to do his work. Hence, the teaching has included the results of careful experiments which show that alcohol is a hindrance instead of a help to both mental and muscular work. One of the best authorities on this subject is Professor Kraepelin, of Heidelberg University, who with his pupils and assistants has put the whole subject of the effects of alcohol on working ability to most thorough and exhaustive tests. The results of laboratory and experimental work on this subject are thus summed up by Professor Benedict in the article above mentioned:

"The average man, with perhaps a family or relatives dependent on him, should not jeopardize his chances for success by the use of alcohol. The diminution in mental and muscular power invariably accompanying the use of even small amounts of alcohol is a potent factor in determining his efficiency, chance for promotion, and appreciation by his employers. Clearness of thought, quickness of perception, keenness of sight, deftness of touch,



"And does it not seem hard to you, when all the sky is clear and blue, And we should like so much to play, to have to go to bed by day?"

skill, and accuracy in manipulation are valuable assets of the successful man, and each and all of these factors are so immediately affected by the use of alcohol as practically to interdict its use with men whose ambition leads them to hope for and strive for the best in life."

ALCOHOL A DESTROYER OF SELF-CONTROL

The present instruction does not exhort persons to depend upon self-control to tell them how much alcohol to use, because the experiments of Professor Kraepelin and other evidence have plainly shown that one of the first effects of alcohol, even in small quantities, is to weaken or destroy the power of self-control. We do not drug the watchman we engage to guard our property, neither can we expect to be guided by self-control when we have weakened the brain with a narcotic drug.



Grammar Lessons

SEVENTH OR
EIGHTH YEAR

THE COVERING OF THE BODY

THERE is no topic in physiology and hygiene in which it is easier to interest a class of young people than that chosen for development in the present lesson.

Everybody admires a clear, delicately tinted complexion, and there are few persons of the age represented in these grades who are unwilling to take some pains to secure it. Unfortunately, they frequently attempt to remove pimples and other forms of skin disfigurement by external applications, instead of going to the root of the matter and preventing the cause of such disorders.

The skin is a health indicator. If it is fresh and bright, it is *prima facie* evidence that the digestion is good, the circulation unimpeded, and all the various organs of the body normally at work.

On the other hand, if the skin is yellow and muddy, or if eruptions appear on it, we may be sure that something is wrong within which must be set right, before the skin will regain its normal tone and appearance.

Every young person, then, must know the rules upon which healthful living is based, and must shape his mode of life in accordance with these directions. Knowledge of the structure and functions of the skin must be supplemented and reinforced by knowledge of all the processes and needs of the body upon which the health of the skin is more or less directly dependent.

Thus, in order to get and keep a good complexion, one must learn how to breathe, taking care to have enough pure air to breathe at all times, when asleep as well as when awake; one must exercise every day in the open air, no matter what the weather; one must bathe regularly, drink plenty of water, eat freely of fruit and plain, nutritious food at regular hours, avoiding rich, highly seasoned dishes, and go to bed early, getting eight or nine hours of sleep. Furthermore, one must not drink beer or any other alcoholic drink, or touch tobacco in any form.

First lessons on the skin with pupils in advanced grades may consider the many important functions which it daily performs. Enough work should follow on the structure of this organ to make it clear to all how the skin is able to carry on all these different kinds of work at the same time. The class will then be ready for intelligent study of the most important topic of all, the health of the skin.

THE PURPOSE IT SERVES

When assigning this topic, ask the class, without referring to their books, to make a list of the different purposes served by the skin. After they have noted down all they can think of, have the lists read aloud, verified, and added to as may be necessary in any case.

As an organ of protection, compare the human skin with that of different animals, birds, insects, etc., noting all points of resemblance and unlikeness, and finding reasons for each. Compare also with the outer covering of trees, shrubs, fruits, and other forms of vegetable life.

As an organ of excretion, find what the wastes are which must be removed from the body, and the different channels through which they are got rid of. How does the skin rank in importance with the other excretory organs? In what forms are solid wastes eliminated from the skin? liquid wastes? What happens if this function of the skin is interfered with? If it is stopped entirely?

As an organ of secretion, discover how many kinds of glands are found in the skin, the products secreted by each, and the purpose they serve.

As an organ of sense, determine what we know of the world and what is going on about us by means of the skin. How may the sense of touch be made more acute? Practice in identifying objects by touch may be introduced at this point.

As an organ of respiration, find how the skin aids the lungs. What animals make a proportionately larger use of the skin in this way than man?

As an organ of absorption, explain the danger to the skin in handling any poisonous substance with the bare hands, and the double danger if the skin is broken or bruised in any way. Refer to the action of poison ivy, nettle, and other poisonous plants in this connection.

As the organ of heat regulation, show how the healthy body is all the time kept at the same temperature by the action of the skin, no matter how hot or cold the outside air may be. Find what this temperature is.

ITS FITNESS FOR ITS WORK

Lead the pupils to discover for themselves

the general properties or characteristics of the skin, and why each is needed. For instance, after they have found that the skin is elastic, lead them to think of reasons why this is an advantage, and what the result would be if the skin on all parts of the body were as rigid as bone.

Have a drawing of a cross section of the skin put on the board by some one in the class, showing the different layers of the skin, the oil and sweat glands, the hair follicles, the blood-vessels, nerves, and pigment cells.

Let the pupils find from their physiologies the functions of each, and what it contributes to the value and health of the skin.

Find also how each is modified by circumstances. When the oil and perspiratory glands are most active, and the reason; what dandruff is; and the cause of tan, freckles, blackheads, chapping of the hands and face, and other common blemishes of the skin.

This is the time and place to study also the appendages of the skin, the hair and nails, finding what purpose is served by each, and how the material of which it is made adapts it to the carrying out of this purpose.

THE CARE IT NEEDS

Under this topic, consider first the nourishment of the skin. It must have proper food and enough of it. Why? No rich, greasy dishes, and the less cake, pastry, and fried or highly seasoned food the better. How do all such substances injure the skin?

No one who desires to keep a clear skin can afford to drink beer, or wine, or any other alcoholic liquor. Why not? How is the skin affected by such drinks? by tobacco? How is the general health affected by these things.

Have the class consult their books and the authoritative quotations at the end of this lesson for further information on these points. Have them make lists of ten or twenty foods that nourish the skin without clogging its pores or injuring it in any way.

Next in importance to the proper nourishment of the skin is the question of its cleanliness.

Find how many miles of drainage tubes have their outlet in the skin. The class would be amazed at the extent of these tiny tubes if they could see them placed end to end in a straight line. If these are not kept constantly open to allow the impurities of the body to pass off, bodily health suffers at once along with that of the skin.

Study the different kinds of baths in this connection, learning the special value of each, the best time for bathing, and when baths should not be taken.

For most persons in health, a cold or cool

sponge or shower bath the first thing in the morning is a good tonic for the skin and the general health. At night, a warm bath with soap and water may be taken; at least the hands and face should be thus washed, rinsed thoroughly, and wiped dry on a soft towel.

Use soft water that will make a lather. If hard water only is available, soften it with a little borax or a few drops of ammonia. Bran or oatmeal water is also good for the skin, especially in cold weather.

If the hands and face become chapped, a little cold cream may be worked into the skin, but not enough to leave a greasy look. Use lemon juice, diluted until it does not make the skin smart, to remove stains. Tomato may be used for the same purpose.

Buttermilk is soothing to the skin when it has been sunburnt, and it helps also to remove freckles.

Paint and powder are both injurious to the skin. What is the reason?

Other things besides food and cleanliness that are essential to a healthy skin and a good complexion are air and sunshine. Think of reasons why both are needed.

Bring out the fact that perspiration is an advantage to the skin, and that it is constantly going on. Have the class show that this is the case and explain why it is true. Why should draughts be avoided after one has been exercising?

The clothing worn must be warm enough but as light in weight as possible, and worn so loosely that air can circulate freely to every part. Why?

Clothing that irritates or chafes the skin should not be worn. What is the reason? Some skins are sensitive to wool. In such cases it is better to wear fleece-lined undergarments in winter, or a thin cotton garment underneath one's flannels.

Sometimes cheap black or colored stockings irritate and poison the skin. What property of the skin makes this possible? Why should such garments be avoided? Why should rubber overshoes and ulsters be worn only when necessary, and never in the house?

In former times, it was commonly thought that alcoholic drinks made it easier for one to stand great extremes of temperature, so people drank in cold weather to keep them warm, and in hot weather to keep them cool. What is known now on the contrary in regard to both these theories?

How does alcohol effect the drinker in hot weather? in cold? Why is the drinking man less able to stand cold and exposure than the total abstainer? Why is he more likely to suffer from sunstroke?

Refer the class to their physiologies and to the authoritative quotations given with this lesson for answers to these questions, until the effects of alcohol on bodily temperature are thoroughly understood.

AUTHORITATIVE QUOTATIONS

ALCOHOL A CAUSE OF SKIN DISEASES

Alcohol favors the origin of skin diseases, because the alcoholic subjects himself much oftener to influences which often lead to skin diseases. Alcohol also favors the development of toxic erythema, of gangrene, and other disturbances of nutrition, and intensifies all suppurative processes of the skin.—NEW-MAN, on the *Influences of Alcohol in Skin Diseases*.

Indulgence in alcohol may leave its mark upon the skin as surely as upon other organs and systems of the body. Acne rosacea is the disease that is most generally regarded as one of the stigmata of intemperance. It is especially seen in wine and spirit-drinkers. The nose is red, but not generally increased in size, whereas the wine-nose presents the largest excrescences. The beer-nose is less red, more oedematous and bloated.—G. NORMAN MEAGHER, M. D., M. R. C. P., London.

ALCOHOL INJURES THE TEXTURE OF THE SKIN

The skin of the alcoholic becomes flabby, readily soaked, and permeable. There is an imperfect combustion of fat, which accumulates in the tissues, especially in the integument.—SIR LAUDER BRUNTON, F. R. S.

ALCOHOL LOWERS BODILY TEMPERATURE

The effect of alcohol is a fall of temperature, and not, as is popularly believed, an increased heat of the body. It is true that after the use of alcohol there is a feeling of increased warmth, but this is due only to the increased vascularity of the skin and the activity of the sweat glands.

Alcohol seems to act in two ways: it has little or no effect upon the production of heat in the tissues, but greatly increases the loss of heat by causing the cutaneous vessels to dilate, stimulating the sweat glands and quickening circulation.

Various observers have found that alcohol taken in ordinary quantity as a beverage causes a slight depression; on the other hand poisonous doses may cause a fall of 5 or 6 degrees.—SCHAEFER, in *Text-Book of Physiology*.

Even after moderate quantities of alcohol, the vessels of the skin dilate, and thus a larger quantity of blood is exposed to the cooling or heating influence of the surrounding medium. Men and animals after the imbibition of alcohol are more at the mercy of their environment, for cold will no longer make their blood-vessels contract. On the other hand, we have reason to believe that when the surrounding air is warmer than the blood, alcohol will raise the

temperature, such a result being facilitated by a coincident diminution of perspiration.

We may thus conclude that alcohol, in any dose perhaps, lowers temperature when combined with external cold, and that it raises temperature when taken in a tropical atmosphere (sunstroke).—T. K. MONRO, M. D., Physician to Glasgow Royal Infirmary, and J. W. FINDLAY, M. D., Asst. Physician to same.

ALCOHOL A CAUSE OF SUNSTROKE

Among 91 cases of sunstroke, 12 of them resulted fatally and half of these were due to alcohol. Alcohol is a strong predisposing cause of sunstroke.—M. J. LEWIS and A. F. PACKARD, in *Inter. Monat.*

CIGARETTES AND THE COMPLEXION

Suppose a boy has a lot of cigarettes and smokes a few of them every day. Such smoking will reduce his strength and general vitality, as will appear in his pale complexion and his diminished appetite.—T. M. COAN, M. D.

Since cigarettes seem less provoking
Unto the ones who do the smoking,
Oh, won't some power please compel 'em
To smell themselves as others smell 'em?

—*Boston Herald.*



"She maketh sunshine in a shady place."

BOOK NOTICES

BEAUTY THROUGH HYGIENE, by Emma E. Walker, M. D. A. S. Barnes & Co., New York. Price \$1.00.

In this day of fads and cults, it is a relief to take up a book on hygiene that talks straight common sense from beginning to end. We feel like recommending this little manual of Dr. Walker's with sincere enthusiasm. It is based on thorough, scientific knowledge of hygiene for girls, is interesting and practical. The fat girl and the thin girl each has a chapter, and each certainly ought to own a copy of the book; while the medium sized girl is not neglected. The chapter on cheerfulness may not be wholly original but it is a good tonic.

CONNECTIVES OF ENGLISH SPEECH, by James C. Fernald. Funk & Wagnalls Co., New York. \$1.50 net.

Right use of connective words is one of the niceties of language that mark the scholar. It follows, therefore, that such words are worthy of careful study. This has been given by Dr. Fernald, and the results have been embodied in the treatise mentioned above. More than 7,500 classified synonyms and nearly 4,000 antonyms are discriminatingly given, the correct use of the various prepositions is amply illustrated, and a large number of suggestions has been made as to the accurate use of words. The student or business man who aims at clearness and precision, and who does not, will find this book of great value. It is one of the few volumes that should be kept within easy reach at all times.

PSYCHOLOGY AND PATHOLOGY OF HANDWRITING, by Magdalene Kintzel-Thumm. Translated from the German. Fowler & Wells Co., New York. \$2.00 net.

The underlying principle in this book is that mental conditions express themselves consciously or unconsciously in acts, and that conversely what a person does is indicative of what he is. Applying this principle to handwriting, the author shows by an elaborate argument and numerous illustrations how this reveals character. It is a readable book for one interested in psychic phenomena, whether one agrees with all the author's conclusions or not.

NERVOUS EXHAUSTION, by George M. Beard, A. M., M. D., Fellow New York Academy of Medicine. E. B. Treat & Co., New York. \$2.00.

In these days of strenuous living and continued excitation of brain and nerves, it is not surprising that nervous diseases have increased proportionately, or that neurasthenia (nervous

exhaustion) has invaded all ranks of society. In spite of this increase in such disorders, medical investigation of the causes to which they are due and suggestions as to remedies and means of prevention have long been lacking or inadequate. Dr. Beard gives a number of reasons why this state of things has existed hitherto, and devotes the main part of his work to a consideration of these problems. It is a book for the general practitioner who must meet constantly in his practice patients with either real or fancied nervous troubles, and who needs to be able to distinguish the true state of affairs and treat the patient accordingly.

THE CYCLE OF LIFE, by C. W. Saleeby, M. D. Harper & Bros., New York.

A collection of essays on a variety of subjects, showing the scientific relation of each to human life and needs. Beginning with the living cell, the author discusses fundamental principles in chemistry, physics, physiology, psychology, and morals. The chapter on alcohol calls attention to the great petition circulated last year among registered physicians in Great Britain urging that school children be taught the nature and effects of alcohol, and after considering the latest evidence declares that "Arraigned before the bar of science, alcohol has been found guilty; the judges are physiology, pathology, pharmacology, clinical medicine, psychiatry, and criminology." The verdict is in, and it remains for society to pass sentence. Education is doing its work.

A SCRIPTURAL EXCUSE

Dorothy is a regular attendant at Sunday School and always remembers the texts. One day she came in from play with a much soiled pinafore.

"Why, what a looking object you are," said Mamma.

"Man looketh on the outward appearance, but the Lord looketh on the heart," said Dorothy meekly, so what could Mamma say.—*Little Chronicle*.

PHYSIOLOGY TOPICS FOR MAY

PRIMARY—Care of Face, Hands, Nose. Beer, Wine, Cider. The Teeth. The Voice. How Food becomes part of the Body: Work of Teeth, Stomach, Blood.

INTERMEDIATE—Framework of the Body. The Body's Need of Watchmen: Special Senses. Enemies of the Body. Suitable and Unsuitable Beverages.

ADVANCED—Fermentation. Municipal and National Hygiene.

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THE SCHOOL PHYSIOLOGY JOURNAL



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School Physiology Journal

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No. 10

JUNE

BY MARY NOEL MEIGS

LAUGHINGLY thou comest,
Rosy June,
With thy light and tripping feet
And thy garlands fresh and sweet
And thy waters all in tune ;

With thy gifts of buds and bells
For the uplands and the dells

With the wild-bird and the bee
On the blossom or the tree,
And my heart leaps forth to meet thee
With a joyous thrill to greet thee,
Rosy June

THE MODERATE USE OF ALCOHOL AND LONGEVITY

BY T. D. CROTHERS, M. D.

Professor of Diseases of Brain and Nervous System, New
York School of Clinical Medicine.

FEW persons can use spirits moderately in this country, in any form, regularly every day for any length of time. The so-called moderate drinkers, and those who use wines or beers at the table are, with few exceptions, in the first stages of inebriety or alcoholism. Such persons may not develop chronic stages, but they are subject to toxic periods and nerve explosions, and frequently die from pneumonia or other acute diseases.

THE MODERATE DRINKER A MYTH

In a study and experience of over thirty years, I have never known any persons who were strictly moderate users of spirits for any great length of time. Those who claim never to exceed a minimum quantity daily have been found to have excesses at intervals usually concealed. The ordinary business man who calls himself temperate because he drinks sparingly may possibly be able to keep within narrow limits, but he is the rare exception to the rule. Concealed drink excesses among this class are often the real cause of alleged disabilities and diseases.

HIGH DEATH RATE OF MODERATE DRINKERS

A study of so-called moderate drinkers indi-

cates a higher mortality than amongst those who drink to excess at intervals and have a period of total abstinence. One of the reasons is that the steady drinker suffers from the cumulative anaesthetic action of alcohol, which constantly depresses vitality and lowers the resisting forces to acute diseases.

Such persons die suddenly from pneumonia, Bright's disease, hemorrhage, and other acute affections, and when injured suffer from both physical and mental shocks. In addition to this, the continued use of alcohol increases the toxins formed in the body and those taken from without, also diminishes the power of elimination, the direct result of which is a great variety of maladies called rheumatisms, dyspepsias, and malarious states.

If to relieve this condition the patient takes bitters or proprietary drugs, the injury is increased, and opium and other drug addictions with neurotics are certain to follow. The concealed use of drugs and spirits is increasing in this country, and such drugs are used to cover up states of exhaustion and strains.

A delusive theory often mentioned in the daily papers and illustrated by so-called examples to show the moderate use of alcohol or opium in persons who have reached great age are found to be largely myths. As chairman of a committee to study these newspaper examples of longevity associated with the use of alcohol and tobacco, I found in twenty instances not a veritable one. The nearest approach to this was one who had drunk for forty years, but during that time there had been many free intervals of abstinence. Nearly all these alleged drinkers began the use of spirits after the middle of life, and were exceptions to the rule. Our association for the study of inebriety has been engaged in the study of heredity, particularly of the descendants of persons who have drunk spirits. These studies have not been published.

One of the conclusions shows that so-called moderate drinkers in this country rarely live beyond fifty years, also that over 60 per cent of the descendants of these ancestors are defective and neurotics, suffering from psychosis and neurosis, with low vitality and early death.

Another conclusion sustained by statistical studies extending over many thousand cases is that the moderate and excessive user of spirits at twenty-five years of age rarely lives to the fiftieth year. Death follows from some acute disease or accident. Also his descendants

seldom pass the thirtieth year. In other words, the longevity of the alcoholic never exceeds fifty years, and that of his descendants is below thirty.

RACE EXTINCTION AND DEGENERACY

The race is practically extinguished in the third generation unless associated with some more vital stock. Still another fact comes into prominence—viz., the use of spirits in almost any form is followed by a peculiar mental degeneracy. Pauperism, insanity, idiocy, criminality, and a long list of so-called moral delinquencies, which are literally physical degenerations of neurons and nerve centers, are the common sequelae. The race has been switched off on the downward track to extinction. The so-called moderate use of spirits is the first switch point.

This is not a theory or opinion, but it is a demonstrated fact. The study of the dependent classes, including the criminals showing the large proportion of alcoholic ancestors, is strong evidence of this. Beyond this range of scientific facts another realm is opening and another side of the subject is coming into prominence.

It is the materialism of bitter experience spreading through all circles of industry, bringing startling confirmation to the theory that alcohol is an anaesthetic and paralyzant in its effects on the organism. All the great captains of industry and the employers of labor and directors of business interests are demanding more imperatively that responsible and trusted men in all departments shall be total abstainers simply for business reasons. To them, moderate drinkers are defective in judgment, capacity, and physical vigor. The elements of risk, danger, and loss are increased in the work they perform. The conclusion is not sentiment nor moral theory, but the teaching of harsh experience and knowledge of the operation of inexorable laws. The movement in this direction is silently going on. There is no clash nor roar of revolution. It is the march of industrialism along the lines of least resistance toward a definite end.

ESTABLISHED CONCLUSIONS

Some of the conclusions which seem to be established beyond question are:

First, that alcohol is a narcotic in its action on the organism, and this has been surrounded with delusions and theories of tonic and stimulant properties which make it a dangerous agent when used as a beverage.

Second, the action of alcohol is that of an anaesthetic and narcotic, and it is not only a toxic agent, but it increases and encourages

toxaemias which have a peculiar corroding action on the organism.

Third, when alcohol is used continuously, even in small doses, its cumulative action impairs vital force and of necessity lessens longevity and increases mortality.

Fourth, these theories are confirmed by the statistical experience of insurance companies and the observations of health boards and health statistics.

Fifth, while it is not possible at present to state with mathematical precision the exact influence or damage to the body by the use of spirits, the fact that it has a very powerful influence on the vitality and longevity is beyond question.

Sixth, both the teachings of science and statistical studies sustain each other in the conclusion that non-abstainers and moderate drinkers who buy insurance should pay higher rates for the additional risk and perils which their condition calls for.

That education is very lopsided which provides for the development of the intellect only, regardless of the instruction necessary to the possession of a sound body that will be the efficient servant of an intelligent mind.

Emperor William, who during the last three years has been discouraging immoderate drinking, has engaged several chauffeurs making it a condition that they shall be total abstainers both off and on duty.

The wages of these men are higher than usual, as a consideration for their abstinence.—*New York Press*.

IN THE HEART OF THE WOODS

BY MARGARET E. SANGSTER

Such beautiful things in the heart of the woods!

Flowers and ferns, and the soft green moss!

Such love of the birds, in the solitudes

Where the swift wings glance and the tree-tops toss;

Spaces of silence, swept with song,

Which nobody hears but the God above;

Spaces where myriad creatures throng,

Sunning themselves in his guarding love.

Such safety and peace in the heart of the woods,

Far from the city's dust and din,

Where passion nor hate nor man intrude,

Nor fashion nor folly has entered in.

Deeper than hunter's trail hath gone,

Glimmers the tarn where the wild deer drink;

And fearless and free comes the gentle fawn

To look at herself o'er the grassy brink.



Primary Lessons

REVIEW WORK

CARE OF THE BODY

THE story is told of a good French bishop who had so worn himself out by his ministrations to others that he was ordered to take one day's entire rest, seeing no one, not even the King of France.

Hardly had he retired to his chamber when he returned to say to his attendant: "Do not disturb me for the King of France, but if a little child knocks, call me at once."

Many a teacher comes to the close of her year's work with much the same feeling. No matter how imperative her need of rest and change, if a little child is to be helped she responds as quickly in vacation as when at her desk in the schoolroom.

But notwithstanding this spirit of continual willingness, every teacher knows that during the next two months the great army of school children will be left much to their own devices, and that if they are to be kept from serious mistakes in living, the closing lessons of the year in physiology must emphasize anew the importance of a healthy body and what they must do to keep themselves strong and well.

Special pains should be taken to make this review work interesting. Put a picture of the prettiest child you can find in a frame and keep it on your desk as a model for each day's lesson.

Call the picture the class baby, and talk one day about her or his clothing; what she should wear in wet weather, in warm, in cold, when she goes to school, to church, to a party, when she plays, at night, etc.

Another day talk about her food; what she should eat and drink for breakfast, dinner, supper, on very hot days, between meals, when she is not feeling well; why she should not chew gum, drink beer or wine, eat green apples or cherries, much candy, sodas, rich pies and cake.

Other review lessons may be on exercise and rest, when she should take both, how much she needs, why she must have her windows open at night, some good games for her to play, and

some kinds of work she can do; on cleanliness and the care of the body, hair, teeth, and nails; and lastly, perhaps, on the parts of the body itself, why our class baby needs each part, and what she should do, if she were a real live child like them, to help each to do its work well.

Before the close of each lesson, turn from the personification of the picture to the children themselves. If this is the way they would have their class baby live, will they try to do the same? Can any one think of a better plan? How many will try to live this way all summer?

In all these lesson talks, encourage the children to express their own thoughts freely. If they have wrong ideas, this is the way to find it out and correct them.

The suggested questions that follow may be used in final reviews.

FIRST YEAR

Why should we wear rubbers when we go out in the rain and wet, and take them off as soon as we come into the house?

How should we take care of our clothes?

Why is it better to drink water and milk than tea or coffee?

Why is beer a bad drink?

Why do we need to eat every day?

What are some of the best foods for children?

Why do children need to go to bed early at night?

Why should we always have the windows open in our bedrooms when we go to sleep?

How will cigarettes hurt a boy if he smokes them?

How often should we wash our faces and hands? our whole bodies?

AUTHORITATIVE QUOTATIONS

If 100 boys, aged 10 years and undersized, their parents stunted, alcoholic, or the victims of the morphine habit, were placed under ordinary good hygienic conditions, given plenty of wholesome food, outdoor exercise and sleep, it would be found that the average height of these boys at 17 years would be up to the standard.—*British Medical Journal*.

Children are particularly susceptible to poison from alcohol.—MAX KASSOWITZ, M. D., Univ. of Vienna.

Alcoholic drinks are always and in all circumstances absolutely forbidden to children. By child I understand every individual who has not attained to maturity of body, for experience has proved that everything that injures strikes more directly, and in a more intense manner, the growing organism than the organism that is entirely and completely developed—DR. WORMER.

The whole physical organism is enslaved by tobacco. It is making terrible inroads among the boys of today, dwarfing, depleting, stupefying the brain, enervating the nervo-muscular system, and impairing the intellect. More than a score of diseases are traceable to the use of the weed. The young are vastly more susceptible to narcotic poisoning than those of adult years.—D. H. MANN, M. D.

Tobacco is positively harmful to the development of the physical and mental powers of our growing youth. Statistics show most markedly the contrast in physical and mental standard between the boy who uses tobacco and the one who does not.—L. D. Mason, M. D.

SECOND YEAR

What are some of the things that help to make children grow?

What are some of the things that keep children from growing as fast as they should?

Why do we need pure air to breathe all night as well as all day?

Why should we not wear the same underclothes at night that we have worn in the daytime?

Why should we brush our teeth after every meal?

What harm would it do to bite any very hard substance with the teeth?

Why should we change our shoes if our feet have become wet?

What are some of the best foods to eat in very hot weather? in cold weather?

Why is cider bad to drink if the apples it is made from are good to eat?

What do we find out through our eyes? our ears? our noses? our mouths? our skin?

AUTHORITATIVE QUOTATIONS

The majority of people lay the foundation of their subsequent drunkenness in early childhood.—DR. SMITH, Schloss-Marbach.

There is absolutely no doubt that alcohol in any form, even in light beer and light wine, is a poison for the healthy child. The older children lose their mental, as well as their bodily

vigor when they use alcoholic drinks; they develop prematurely, make unsatisfactory progress in their studies, and become anæmic. Not seldom their disposition is also spoiled; previously gentle and manageable, the use of alcohol makes them excitable, irritable, and unmanageable.—L. THOMAS, M. D., Director Child's Hospital, Freiburg.

Alcoholic drinks produce incalculable injury upon children. Alcohol destroys the natural development of both mind and body.—A. BAER, M. D., Berlin.

If we have any regard for the welfare of the younger generation, we shall have to rescue our youth from that murderer of humanity, alcohol, and win them to total abstinence.—S. STUMPF, M. D., Medical Counsellor, Munich.



"No matter how the day may go, you can not make him cry; He's worth a dozen boys I know, who pout, and mope, and sigh."

Besides giving rise to digestive troubles in children, alcohol causes many other most injurious consequences. It attacks the nervous centers, the brain, and the spinal marrow, and causes troubles that sometimes prove fatal. Very often convulsions are the result of taking alcohol. In scanning medi-

cal literature, one finds observations establishing the fact that alcohol may cause that terrible malady, meningitis.—DR. BIENFAIT, in *Le Bien Social*.

Cigarette smoking by the immature causes a partial arrest of growth, both physical and mental, so that a bright child will develop into a weakling exhibiting little or none of the bodily or intellectual perfection promised during the pre-cigarette period. In this, as with other evils, prevention promises more than correction: for in this addiction, as in others, there is a mental bias that in many cases prevents co-operation in the matter of cure.—M. R. KEELEY, M. D.

The cigarette is deadly because it is so cheap, and consequently is within the reach of boys of tender age who obtain them in packages and smoke them almost continually during waking

hours. Owing to the sensitiveness of the youthful system to all drugs, this results in stunted growth which leaves its imprint after the boy has grown to manhood, and in many, many cases the effects are never outgrown, even though the cigarettes are discontinued.—CHARLES H. HAMILTON, M. D.

THIRD YEAR

What are the most important parts of the body? Why is the body made up of parts instead of being all in one piece? How are we able to move the different parts of the body?

How is the body covered?

Why should the skin be kept clean?

What does the body need to make it grow?

How much sleep do children need? Why should they go to bed early and get up early?

Name four good kinds of exercise. What parts of the body does each of these exercises help to make larger and stronger?

How does beer hurt those who drink it? Why should I never drink beer?

Why is the boy who smokes in danger of being small and thin?

What is a good breakfast for a growing child? a good dinner? supper?

AUTHORITATIVE QUOTATIONS

The conditions of health are sound structure, with plain food, pure water, fresh air, and abstinence from noxious agents and wasteful habits.—F. R. LEES, M. D.

Alcohol predisposes children to irritability, and renders them disagreeable and difficult to deal with; it often causes them to have nightmare, during which they awake with a start, the prey to great terror. The alcohol produces its effects on children in a fashion almost instantaneous, the maladies taking an acute form, especially on the digestive and nervous systems. It is also the cause of skin affections, among which redness and scab are frequent.—Dr. BIENFAIT, in *Le Bien Social*.

Drinking first makes people thirsty, lazy, then weak, then sick, and at last disgusted with life.—L. SONDEREGGER, M. D.

From the standpoint of race hygiene we must oppose with the utmost energy the use of alcohol as a beverage for children. If, during this most important period of their development as far as their future is concerned, our youth are prohibited from using alcoholic drinks they will grow up mentally and physically more energetic for the ideals of humanity.—RICHARD DEMME, M. D., Univ. of Berne.

Shattered constitutions and premature death are daily results of tobacco-using. Tobacco slaves are not infrequently called hence with what is termed tobacco heart, noticed in the obituary columns as heart failure.—D. H. MANN, M. D.

All educators agree that boys who use tobacco in any form make less progress in school, and that the most pernicious form for old or young is in the form of cigarettes. Any student who uses it falls below in his work and standing in his classes. The boy is soon troubled with a loss of memory and energy, he lacks in morals, is deceitful, and soon loses his self-respect, has trembling hands, insomnia, and dyspepsia. From this class come many cases of insanity and early deaths. No minor can use cigarettes and be in good health.—B. BROUGHTON, M. D.

In its action on the system, nicotine is one of the most powerful poisons known. A drop of it in a concentrated form was found sufficient to kill a dog, and small birds perished at the approach of a tube containing it.—Wood's *Materia Medica*.

The London *Lancet*, one of the most reliable medical journals published in the English language, has recently stated that the most deleterious product in the combustion of tobacco is carbon monoxide, which is the deadly constituent of water gas, and is present in comparatively large quantities in tobacco smoke. This is the poison that is responsible for the utter demoralization of that unhappy individual who has come to be known as the cigarette fiend, whose pale face, shattered nerves, and hopeless position in the community is recognized as applying to many of our American youth, whose opportunity for usefulness and happiness has passed away.—CHARLES BULKLEY HUBBELL, Ex. Pres. Board of Education, New York City.

The cigarette is the starting point of thousands who fall into its clutches and eventually drift away from all sense of morality.—JOHN WANAMAKER.

NUMBER ONE

"I tell you," said Robbie, eating his peach,
And giving his sister none,
"I believe in the good old saying that each
Should look out for Number One."

"Why, yes," answered Katie, wise little elf,
"But the counting should be begun
With the other one instead of yourself,—
And he should be Number One."

—Selected.

Grammar
LessonsREVIEW
WORK

GROWTH IN VACATION

ONE of the unsolved problems in education is how to bridge the gap between school and vacation and make both equally profitable to the child. Work, play, and study are all means toward the same end, that of fitting the youth to perform worthily his part in life, and the time is coming when they will not be looked at as isolated experiences but as closely correlated parts of the same whole.

Vacation is the special opportunity to develop a healthy body, just as term time is the special opportunity to develop mental power, but the vacation that is all play misses its true aim. Most boys and girls will have to earn their own living in one way or another, and even those who do not must be able and ready to make some return to the world for what they have received.

Throughout the year, each pupil has learned much of the way to care for his body. Now is the opportunity to test these facts and make them of real value. He has learned that there are certain foods which are especially suitable for hot weather. Is he prepared to take this knowledge home with him and do all he can to make the family table correspond?

He has learned many ways of developing muscle. Is he ready to choose those which will be of help to others as well as himself? He has found that habits of cleanliness, of promptness and politeness, of abstinence from beer and cigarettes, are necessary to his success in getting and keeping any sort of a business position. Is he ready to put this knowledge into practice?

These are questions which should come up in reviewing the work in physiology and hygiene with grammar school pupils. Others will as readily suggest themselves. The important thing for each pupil to carry away with him is that he must not only know what will make or mar his own efficiency in life but that he must actually choose the one course and refuse the other.

FOURTH YEAR

Why do we need a good supply of fresh water every day?

What is the great danger in taking an occasional glass of beer or any drink containing alcohol?

Give three reasons why we need to eat. What kinds of food are best for us?

How does the food we eat get to every part of the body that needs it?

How is the blood purified?

What is the use of the bony framework in the body? Why is it made up of many bones instead of being in one solid piece?

How can we move any part of the body? How is good muscle made? How is it harmed by alcohol or tobacco?

What does the brain need in order that we may be able to do good work with it? Why are tobacco users so often at the foot of their class? Why is the brain so quickly injured by alcoholic liquors?

How can we help our senses to become more acute? How may they be injured?

Why does not the skin wear out? How should it be taken care of?

AUTHORITATIVE QUOTATIONS

It has become the pernicious custom to allow children the use of beer and wine, of alcohol in a variety of forms. People imagine that this imparts strength to the growing organism. But the very opposite is the result, for every organ is weakened. . . . For the development of intelligence this is the very thing we must avoid, since it is a poison for the brain, especially for that of the child.—J. KOLLMAN, M. D., Univ. of Basel.

Good health will, in my opinion, always be injured by even small doses of alcohol.—SIR ANDREW CLARK, M. D., LI., D.

Science does not support the plea that alcohol is a harmless, pleasant beverage. It can not support the plea of a moderate drinker that alcohol is an aid to health. But it does support the position of the total abstainer with an emphasis which it is culpable to disregard. It shows that the abstainer can do more and better work, live longer, and be healthier than the moderate drinker. Science, in short, shows that the abstainer lives the normal life, while the moderate drinker lives the abnormal.—THOMAS EASTON, M. D.

A cigarette in the mouth of an American youth is a prophecy and a sign of the degeneracy of the race.—FRANK V. IRISH, Pres. National Anti-Cigarette League.

The cigarette habit causes positive physical injury, and the associations formed in connection with it are morally injurious.—W. H. G. COLLES, Pub. School Inspector, Chatham, Ont.

The Spencerian Business College rejects cigarette smokers on the ground that cigarettes are the direct cause of premature age, shattered nerves, mental weakness, stunted growth, and general physical and moral degeneracy.—*The Defender*.

FIFTH OR SIXTH YEAR

What different kinds of work are done by the skin? How is it kept healthy and in good repair?

What organs remove the waste matters from the body?

Why do we need to breathe? What kind of air is necessary?

Show why wine, beer, and cider are not foods. Tell some of the ways in which these drinks injure the body.

Describe the process by which food is digested and made into blood.

How do we form habits? Why is the habit of moderate drinking or smoking so hard to overcome?

Why is a correct position in sitting and standing necessary to health?

How does the use of tobacco affect size and growth in young people?

Why is the tobacco user so frequently selfish and regardless of the rights of others?

What are the chances of success in business of a boy who takes a glass of beer or smokes cigarettes when he feels like it?

AUTHORITATIVE QUOTATIONS

In training, there are three physiological necessities: first, to increase the muscular force; second, to get rid perfectly of waste products; third, to strengthen the staying powers of the muscles of the heart. The effect of alcohol may be to stimulate for the moment, but in the long run it decreases muscular force, and hinders the process of getting rid of waste matter. It is therefore a real hindrance to athletes, and

under its influence feats of endurance are impossible.—G. SIMS WOODHEAD, M. D., Univ. of Cambridge.

If moderate drinking led to more moderation, and that to total abstinence, it would not be dangerous. The trouble is that it leads to more drinking and intemperance.—*American Issue*.

An adaption to moderation in alcohol or to moderation in the use of any other narcotic poison is hardly conceivable, because moderation has no boundaries, while all of these poisons by means of their peculiar effect on the brain, steadily maintain the tendency to induce or even increase excess in drinking. Alcohol for human-

ity is injurious and poisonous, anything but innocent in character: in consequence, true moderation consists in abstaining from it.—AUGUST FOREL, M. D., Univ. of Zurich.

Unlike any other hydro-carbon used as a food or as a beverage, alcohol has a peculiarly subtle effect upon the nervous system, forming a habit which becomes maniacal and uncontrollable in character before the habitué is at all aware of it.—C. A. GREENE, M. D., in the *Medical Record*.

The use of tobacco in any form by young boys has an undoubted tendency to lower very materially the mental force and acumen, and to render the user a

person without ambition, and may even cause insanity or idiocy.—N. B. DELAMATER, M. D., Specialist in Mental and Nervous Diseases.

The earliest effect of tobacco is upon the heart, through its nervous mechanism; then upon the general nervous system, including the brain (the latter showing itself in insomnia, loss of memory, and later in want of proper mental control). Finally, the nutrition of the entire system suffers.—CHARLES GATCHELL, M. D.

It is one of the singular physiological actions of alcohol that its very presence in the human body maintains the desire to take more of it in those who take a little, and in this manner drunkards are produced out of moderate drinkers.—SIR B. W. RICHARDSON, M. D., F. R. S.



"Idols of hearts and of households,
Angels of God in disguise."

School Physiology Journal

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What is this that hath made the rose—,
 Gray roots and an earthy clod?
 Rather—the sunshine, rain, and dew,
 And—the breath of God.

—MADELINE S. BRIDGES.

THE WORK FOR TODAY

THE season of the year for making out new courses of study is at hand, and now is the time to present the International Course of Study in temperance physiology to school officials, explain its requirements, and urge its adoption for the ensuing year, with the Oral Lesson Book for primary teachers' use during the first three years of school, and graded indorsed books for pupils' use beginning with the fourth school year.*

The International Course of Study is our American plan of instruction in temperance physiology, wrought out through years of experimental study of the truths that need to be taught to prevent the formation of drinking and other unhygienic habits and insure a sound national physique, and also of the time and place for this instruction and the methods by which it should be given.

TEMPERANCE INSTRUCTION IN ENGLAND

The results of our system of temperance education, as seen in the life and business efficiency of the American people, are leading to its adoption in other countries. Already our course of study has been recommended to every local school board in England, Scotland, Ireland and Wales with the request that it be made the plan of work in this branch in all the public schools of those countries. This action has made it an international course.

While this recommendation foreshadows the day when the English-speaking race will have intelligently abandoned the use of alcoholic

* Send 2 cent stamp to Mrs. Mary H. Hunt, 23 Trull street, Boston, Mass., for sample course of study and list of indorsed books.

drinks, it is now calling out something of the same opposition in England that we have formerly encountered in America.

These familiar with the steps taken by the Committee of Fifty to attack scientific temperance instruction in our public schools will remember that Sir Michael Foster is credited in the *Report* of the Committee of Fifty with the formulation of the Cambridge Statement, a vague attempt to deny that alcohol is a poison by manufacturing an absurd definition of a poison that would exclude all such drugs as strychnia, opium, aconite, etc.

This same Sir Michael is now criticising statements that alcohol is a poison which appear in the course of study before the British people. He is saying that if alcohol is spoken of as a poison, water and oxygen must also be spoken of in the same way, because distilled water, applied directly to the nerves, and pure oxygen, under a pressure of sixty pounds to the square inch, would be injurious.

FALLACIES EXPOSED

Fortunately, these fallacies are at once exposed by the eminent scientists who have the course of study in charge, Sir William Broadbent, Sir Thomas Barlow, Sir Victor Horsley, and other members of the Committee of Thirty-one.

They show that the effect of water on an exposed nerve is foreign to the subject, and not to be compared with the effect of taking water in the normal way into the human stomach; and that the effect of pure oxygen under high artificial pressure is not to be compared with its effects when taken in the normal way as a constituent of the air we breathe. Sir William Broadbent's committee rightly characterizes such distortion of scientific truths as reprehensible.

At a great public meeting, Sir Victor Horsley referred to the attempt made by two physiologists of America to get the physiologists of England and the continent to say that alcohol is not a poison. "That attempt," he said, amid cheers, "failed." And he added, "if we are not to talk of alcohol as a poison we are not to talk of it at all, that is the feeling of the medical profession."

Years ago, the idea that alcohol added to strength and efficiency was widespread in theory and practice. But demonstrated effects of alcohol upon muscular precision and nerve force, as brought out in the experiments of Dr. Richardson and others, led to the incorporation of these truths in the text-books now studied by millions of pupils in our public schools.

Through this agency, for more than a decade and a half the public schools in America have

been teaching all classes of pupils that alcohol injures working ability by impairing judgment and manipulative skill. Today, the industries of America well nigh universally demand abstinence as a condition of employment.

All these conclusions found echo in a great meeting recently held in the Mansion House, London, presided over by the Lord Mayor, and attended by leading business, professional, and titled men, met to consider the relation of the use of alcoholic drinks to business efficiency. The testimony concerning the injury done by alcohol to working ability was emphatic and without dissenting voice.

INDORSEMENT OF THE MEDICAL PROFESSION

At a later meeting of London physicians in Examination Hall, Victoria Embankment, to carry forward the movement for promoting the teaching of hygiene and temperance in the public schools, Sir William Broadbent, who presided, reaffirmed his belief in the necessity of attacking the curse of alcohol with the weapon of prevention rather than cure.

"It is in the schools," he declared, "that the victory must be won. The doctors are pleading for the next generation, and backed by the report of the deterioration committee they will not plead in vain."

One of the London papers reporting the meetings says: "It is a great day for the cause of temperance when it finds the medical profession fighting enthusiastically on its side."

The same paper says that if Sir Benjamin Ward Richardson, "who was regarded even at the time of his death as something of a black swan in the medical profession because of his position on the alcohol question, could revisit the earth, he would be startled and rejoiced to find how the medical world regards the teetotal fanatic today."

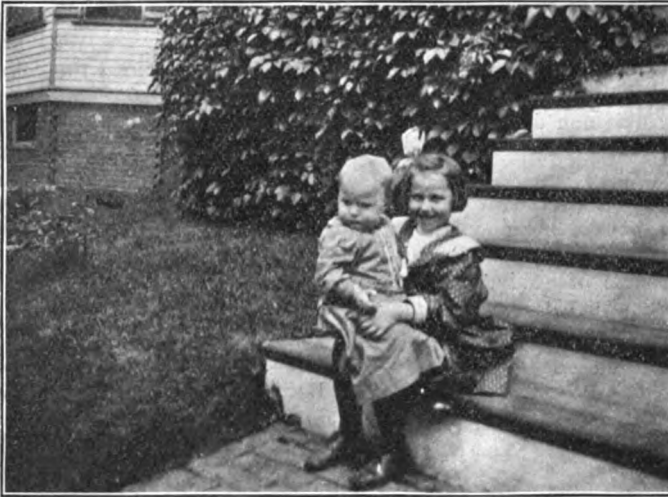
Thus the world is coming to see the truth of our motto that the star of hope for the temperance reform stands over the school house. Now is the time to hold every point we have gained

in the effort to win the coming majorities for freedom from alcohol, and to press on to new victories.

MORE KNOWLEDGE AND MORE CONSCIENCE

THE progress of humanity is the perpetuity of our republic. The coming of Christ's kingdom on earth is waiting for that irresistible volume of public opinion that will sweep the last vestige of the alcohol traffic from our shores. Only public opinion focalized at the ballot can accomplish this end. Nothing that will help to form such opinion on an intelligent basis is unimportant, hence everything that will make more effective our system of

public school education in physiology, hygiene and temperance is vital to the foregoing great interests, whether it is a good course of study with good books adapted to grade for pupils' use who have books in other studies, the skilful and faithful teacher, or such intelligent co-operation on the part of the superintendent of



"Little Miss Helpful," my mamma calls me, When I 'muse baby, and she 'muses me.

schools as is shown in other branches.

"One trouble with the study of temperance physiology is we school men do not like it. We always put it on the schedule for younger teachers," said a school superintendent recently.

"Do you like to teach a subject you do not understand very well yourself?" I asked, and added, "if you know you have sounded the depth of a subject, and have grasped the relation of your pupils' understanding it to their future and to that of society of which they are soon to be a part, and have so studied the progressive development of that subject that you know just what phase of it should be presented to guide your pupils each year and prepare them for the next year's work, you have a sense of reserves on that topic that means intelligent interest and power. A born teacher likes to teach a subject he has thus mastered. It possesses him, and he must teach it.

"That is so," the superintendent replied,

"but I am afraid we do not realize the importance of this study as you do."

"I have always said the superintendent or teacher who is himself a total abstainer, who neither smokes nor drinks occasionally, and who has sufficient moral sense to be a teacher can not fail to realize the importance of this branch if he will study it himself."

"More knowledge on this subject and more conscience then is what we school men need," my friend replied.

That represents the situation. The gratitude of the future is waiting for the multimillionaire who will endow a department in some of our universities for the training of normal school teachers, institute instructors, and through them the public school teachers of this land, in the best methods of teaching physiology, hygiene, and temperance in our public schools.

But meantime, while waiting for this special university course, there is nothing to prevent special study by each superintendent and teacher. The large-hearted men and women who during the coming summer vacation will study the following leaflets,* "To What Extent and By What Methods Should Temperance Physiology Be Taught in the Public Schools?" "A Moral or a Scientific Question?" "Requisites in Making Out a Course of Study," "How to Abate a Great Evil," and "A Progressive Study," will find themselves not only more interested but more intelligently equipped for their next year's school work.

*These may be obtained at cost from the Department of Scientific Temperance Instruction, 23 Trull St., Boston, Mass.

PRIZE ESSAYS IN TEMPERANCE PHYSIOLOGY

SOME months ago, a Loyal Legion Temperance Society of New York City, composed of leading citizens and with Mr. Seth Robinson as President, offered fifty-three prizes to the pupils in the upper grammar grades of the city schools for the best original compositions on the subject, "Our Bodies as the Houses in which we live, what we are taught about them, and how we can make them the best kind of Homes."

As a result of the new interest thus aroused in the study of temperance physiology, a large number of essays was handed in, carefully considered by the committee chosen to pass upon their merits, and one first prize, consisting of a gold medal and \$20 in cash, two second prizes, each consisting of a silver medal and \$10 in cash, and fifty third prizes, each consisting of a bronze medal and \$2 in cash awarded to the successful contestants.

Through the courtesy of Mr. Robinson, we are permitted to publish the first and second prize winning essays.

FIRST PRIZE

In constructing a house it is necessary to first build a framework; so it is with the human body. The framework of a house is constructed of wood, while that of the ~~human~~ body is constructed of bones. Over these bones is the flesh, or muscle, as it is sometimes called. The muscle is a soft, fibrous substance which is very shaky and so the skin grows over it to keep it in shape. There are two kinds of skin; the inner and the outer skins.

Now that I have explained the framework, and its coverings, I will go on to tell about the blood. The blood is a fluid which looks very much like water, and in this fluid are corpuscles, some of which are red, and others white. These give the blood the color of red. Sometimes the blood is a bluish color. The reason for this is that the blood after passing through the whole body becomes impure and is full of foul things. To make the blood pure, we must breathe the pure oxygen freely, in the morning when we get out of bed. This makes a person healthy, wealthy and wise.

As I suppose, you people who have asked us to write a composition on hygiene, and as you are men, I guess you will be very much interested in the injuries of alcohol and tobacco. Both these things have a very poisonous stuff in them, which does a great deal of harm to those who use it. It is therefore wiser to leave it alone. Maybe you will think that I say this because I am a girl, but even if I were a boy I would think the same way on the subject.

Alcohol and tobacco are very dangerous both for the heart and lungs. It weakens them and they can not do their work properly. A great many young boys have gotten into the habit of smoking. If they only knew the harm that it does them, they would leave tobacco to take care of itself. Young boys think that they have a perfect right to smoke, because their fathers smoke. This is altogether wrong. Fathers as well as their sons are at fault for this.

Fathers should not smoke in their children's presence, so as not to get them into the habit of smoking also. It is a very bad habit to get into. Once you begin, it leads you to do so all the rest of your lives. It is the same way with a man who drinks. If he once takes a little liquor to his lips, the next time he will take more, and so on until he becomes a drunkard. As I said before, if he only knew the harm it does him, he would leave it to take care of itself.

Some doctors recommend wine to their patients by saying that it will make them stronger. This may be true, but when a person is sick and is told to drink wine, then even when he is well again he will not give wine up. It draws him to drink it just as a magnet draws a pin or a needle to itself.

▶ I think I have told enough about alcohol and tobacco. I will now say something about exercise for children. Children should when out-of-doors run, jump, or play, so that they will become strong. It is necessary to take a bath at least once a day, to keep the body in a good and healthy condition. The beneficients of bathing are very important, as it opens the pores and all the foul stuff is taken out of them.

This is all that I could find to write on the subject. I have done my best to make it interesting so that whoever reads it will not become tired of it, as soon as one page is read. I hope that this composition will be satisfactory. This is the first time I have ever done anything to win a prize, and I hope that I will be successful. — ROSE R. BECKER, aged 13. Grade 7B, Public School No. 107.



"I don't want to be 'developed'. I'd rather be like you, And have a lovely, lovely time, as common children do."

SECOND PRIZE

Our bodies are to be compared with a great steam engine, or watch, and even greater, because man made the watch and engine, but he could not make a human body. Our bones are the framework of our bodies, because they serve to keep us strong, and to preserve our figure. There are two hundred and six of them in all.

Our blood is a red fluid a little thicker and heavier than water, and in it are many small globules which are shaped like a coin; there are also white ones but they are not so numerous as the red ones. It is the red ones that give the blood its red color.

Our heart is divided into four parts: the left and right auricles, and the left and right ventricles, which are made of strong muscle so that they can do the work of pumping the blood all through our system.

For our bodies to be kept strong and healthy

they must be cared for; they must have a sufficient quantity of food to nourish them. They must be kept clean, so that the skin may perform its duties of keeping the body cool. They must have water, and above all they must have fresh air to purify the blood.

We should take out door exercise for our muscles to become strong. In school we should not sit with our backs humped, because it affects the lungs, and the blood can not flow through them correctly; we should breathe in good long breaths so as to inflate the lungs and purify the blood.

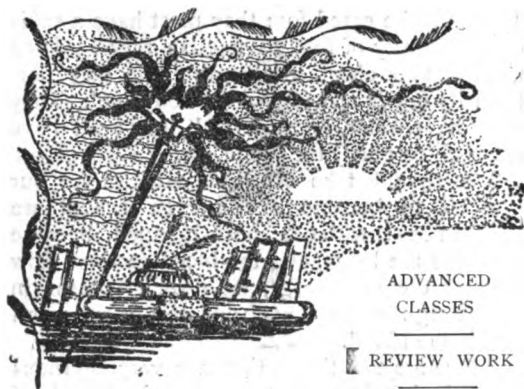
There are two things that are very injurious to the body: they are tobacco and alcohol, of which tobacco is the worst, because it is more easily taken than alcohol among children. If you take a puff of a cigarette and blow it through a handkerchief, it will leave a yellow stain, and when one smokes it leaves the same stain on one's lungs and deadens the brain so that you can not remember anything.

Alcohol is just as bad, but not with children. It has a tendency to absorb water; that is why you can put meat in it and it will not decay. Now our brains are very soft and tender and if

we drink alcohol it will dry up the brain and make it useless. Delirium tremens is a disease caused from its use. The muscles become weak so that they can not stand the weight of the body. Under its grasp some people are merry, others sad, and others foolish.

We should take great care of our bodies so that we shall live the full time of our lives, that God made us to live.—MURRELL ARMSTRONG, aged 15, Grade 6B, Public School, No. 69.

Alcohol is distinctly a poison. . . . It has a somewhat stimulating effect, but this lasts only for a moment, and after it has passed away the capacity for work falls enormously. . . . It is certainly inconsistent with fine work.—SIR FREDERICK TREVES, Bart, M. D., LL. D.



TOTAL ABSTINENCE A KEY TO SUCCESS

IN every element of success, health, brain and will power, and character, total abstinence plays an important part. It is especially fitting, therefore, that pupils who are about to leave the public schools and enter the world of business should take with them clear cut notions of the scientific reasons upon which total abstinence is based.

Furthermore, all such pupils should know the relation which exists between total abstinence and working ability, and thus be able to understand why America, the most sober of the great nations, also holds the commercial supremacy of the world. It should be as much a matter of pride to our youth that this country has been the pioneer in introducing this study in its schools, as that a hundred years ago it led the way in achieving national independence.

We suggest that the remaining lessons of the year in temperance physiology for advanced pupils be based on these topics:

SCIENTIFIC REASONS FOR TOTAL ABSTINENCE

The first of these lessons should take up the great fundamental facts upon which the science of temperance is based, and which, for the last ten or twelve years, have been taught the children in the public schools of America, viz.:

First, that ethyl alcohol is a poison, or, in other words, a substance whose nature it is to injure health and destroy life.

Second, that alcohol is not a food, because a food is a substance whose nature it is to nourish the body without injuring any of its parts, and it is the nature of alcohol to injure the body, especially the nervous system.

Third, that even in small quantities as an appetizer, alcohol not only hinders digestion, but is a dangerous beverage because of its power to create an uncontrollable desire for more that, if gratified, destroys the drinker.

Fourth, that alcohol is not a stimulant in the

sense of adding to strength, efficiency, or endurance, but is instead a depressant that after briefly exciting, blunts the perceptive faculties, dulls the judgment, impairs muscular precision, and thus injures working ability.

Consider with the class the scientific accuracy of these statements one by one. Who are the people who believe these verities today? What reasons have they and we for thinking them to be truths instead of mere theories? What authorities can be found to substantiate each? In this connection read aloud and discuss each of the quotations given at the end of this lesson, and others germane to the subject which have appeared in previous JOURNALS.

RELATION OF ABSTINENCE TO WORKING ABILITY

What are the qualifications which every business man looks for in his employes today? Why is total abstinence coming to be one of the first requisites in all important lines of work?

Review with the class the effects of even slight amounts of alcohol on brain and muscle power, on quickness and accuracy of perception, and on manipulative skill. In every position in which one or the other of these requirements is a factor, the moderate drinker is severely handicapped in competition with the total abstainer, and in most of them he is sooner or later ruled out entirely.

Find why insurance companies are more and more coming to class total abstainers by themselves and give them better terms than even the most moderate drinkers. In this connection, read selections from Dr. Crothers' article on "The Moderate Use of Alcohol and Longevity," on page 145, and note how completely he disposes of the popular theory that drinking people live as long as or longer than others.

What is the explanation of these facts?

PIONEER POSITION OF AMERICA IN THIS STUDY

An exceedingly interesting lesson can be developed on this topic. Have the class find how long the fundamental truths of scientific temperance have been known to the world; how and by whom they were discovered; when and by whom they were first put into our public school physiologies.

Have them find also what state enacted the first temperance education law ever passed, and what it required; when the last law of this kind was enacted; how the later laws differ from the earlier; when the law of their own state was enacted; how many states in this country now have such laws; what other countries have temperance education laws; how many children are now receiving this instruction.

Show how different countries in Europe,

Asia, and South America are following our lead in providing instruction in hygiene and temperance for their school children. Tell about the recent action of British physicians, 15,000 strong, in recommending our course of study in temperance physiology to all public schools in England, Ireland, Scotland, and Wales, and the attention given to this subject by the head of the educational system of Germany.

Bring out the relation of the Woman's Christian Temperance Union to this work, finding which of its departments has it specially in charge, the name of the national and international superintendent (if Mrs. Mary H. Hunt is not already known to your pupils), something of her past and present work in securing these laws, finding authors and publishers, revising text-books, preparing courses of study, conducting teachers' institutes, and furthering this work in other countries besides America.

WHAT TEMPERANCE EDUCATION HAS DONE AND IS DOING

Final lessons on this subject may be on the practical benefits arising from this study.

Notice first, the change in sentiment towards moderate drinking. Twenty years ago, people generally thought there was no harm in drinking provided one did not take "too much." Scientific temperance has taught the young people of the land and through them older people that the great danger in taking the first glass is its tendency to create an appetite for itself that may become too strong to resist.

Consider the changed attitude of business towards drinking. Before this study was put into the schools, it was easy for a man to find work if he did not drink during business hours. Now a large and increasing number of employers insist on total abstinence at all times. People will not pay for damaged brains when they can get those unpoisoned by alcohol.

Show the improved physical condition of people and the greater length of life today, due to increased knowledge of health laws, including those that teach total abstinence. Hardly a paper or

magazine is now published that does not contain one or more articles on good health and how to get and keep it. Such articles were seldom or never seen until the temperance physiologies had led the way.

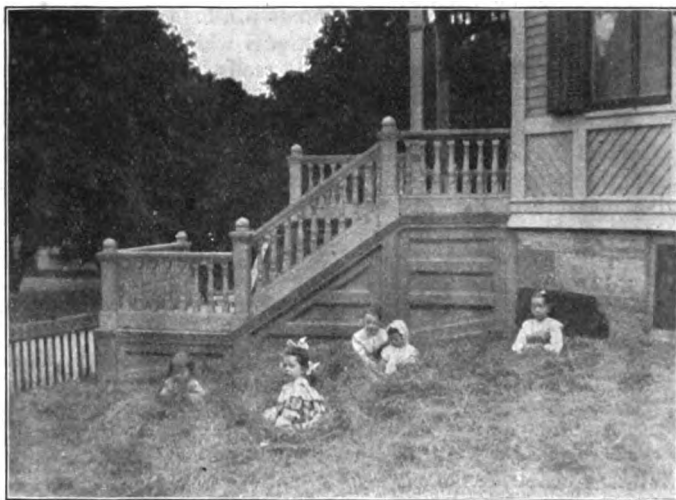
Above all, call attention to the fact that it is the sober and healthful living of Americans, compared with that of the people of other countries, that has largely led to their greater skill and productive ability, and has given them commercial supremacy in the world. At the same time, do not fail to show that our country can maintain this lead only as present and future generations believe in and practice the same total abstinence and hygienic living.

AUTHORITATIVE QUOTATIONS

Alcoholic drinks are not nutritive, they are

not transformed in the body; on the contrary, they retard assimilation and nutrition. . . .

One of the worst features of the use of alcohol and other narcotics is their tendency to be required in ever increasing doses. Ninety-nine out of a hundred drinkers began with an occasional glass of beer, but after awhile they had to have their



"O Joy to be out in June.
In the dawn and dew, 'mid the ruddy beds of clover."

tipple regularly—noon, afternoon, and night—and more of it.—A. FOREL, M. D., Leipsic.

Alcohol is a poisonous drug whose special action in the body is a brain cell paralyzant, destroying these cells in the inverse order of their development Alcohol adds no muscular strength to the body; at most it encourages the expenditure of its force in the shortest possible time.—W. A. CHAPPLE, M. D.

Physiological investigation proves the idea that alcohol possesses nutritive properties to be completely erroneous.—MAX KASSOWITZ, M. D.

Alcohol does not give force; it is not force-producing. The seemingly exciting impulse which it produces is but a fleeting exaltation of the organism, after which comes the period of fatigue, weakness, and paralysis. The consumption of alcohol augments neither the physiological energy nor muscular work. Alcohol does not favor digestion.—G. VON BUNGE, M. D.

BOOK NOTICES

THE FREEDOM OF LIFE, by Annie Payson Call. \$1.25 net. Little, Brown, & Co., Boston.

The title of this book admirably suggests its nature. The free person is he who lives healthily and works gladly; who acquires, that he may dispense for the good of others. Such a one is not haunted by worries, nor is he in bondage either to imaginary or real fear. According to this definition, most of us are not free, however much we may lament the fact. But our chains after all are largely fictitious, and Miss Call has done good service by showing their flimsy texture and how easily they may be broken.

SELF-CURE OF CONSUMPTION, by Charles H. Stanley Davis, M. D., Ph. D. 75 cents. E. B. Treat & Co., New York.

A few minutes study of the health statistics in any large city will show that consumption is the great national plague, all the more deadly because of its insidious nature and popular indifference to preventive measures. Patients far advanced in the disease will travel over the length and breadth of the land to effect a cure, when they will not obey the simple health rules which would render them immune. Dr. Davis has rendered a public service by showing that no one need fear this disease if he breathes, eats, drinks, sleeps, and works properly.

LITERARY PILGRIMAGES IN NEW ENGLAND, by Edwin M. Bacon. Silver, Burdett, & Co., New York.

No more delightful holiday can be spent than in retracing with the author these walks and drives to the homes and haunts of America's best loved writers. Fortunately, they are not scattered through the length and breadth of the land, but are almost within speaking distance of one another. Each is full of the personality which made it famous, and even on a first visit seems familiar, as if the traveler had been there many times before. No other guide than this book is needed, and one will go home to read again with increasing delight the authors he has known from childhood.

SCHOOL CIVICS, by Frank David Boynton, Superintendent of Schools, Ithaca, N. Y. \$1.10 by mail. Ginn & Co., Boston.

An historical sketch of the growth of national, state, local, and municipal government in this country from colonial days to the present,

with a brief history of the leading political parties. The author has admirably succeeded in his aim to furnish a book on civics that can be readily understood by pupils in the higher grammar grades or in the first years of the high school, and that is at the same time accurate and interesting. The bibliography included should prove a valuable stimulus to wider reading on the subject.

THE RIGHT LIFE, by Henry A. Stimson. \$1.20 net. A. S. Barnes & Co., New York.

With the growing feeling that some kind of religious and moral instruction is needed in our public schools has come the publication of many books designed to meet this need. "The Right Life" is one of the best which has been brought to our attention. The standard it upholds is a high one, but it is not austere. It attracts while it points the way. The youth who reads it must feel that he has been shown the best things of life and gain a new impulse to attain them.

THE MANAGEMENT AND TRAINING OF CHILDREN, by William J. Shearer, Ph. D., Supt. of Schools, Elizabeth, N. J. \$1.50. Richardson, Smith & Co., New York.

It is easy to see that the author writes out of the fullness of experience, not only with his own children but with those of others. His book is full of valuable suggestions to teachers and parents as to the best ways of dealing with many types of children, from infancy through the period of adolescence. The chapter urging that parents should study the physical organism of the child and shape their training accordingly is of special value.

PEDAGOGUES AND PARENTS, by Ella Calista Wilson. \$1.25 net. Henry Holt & Co., New York.

Most books on education are written from the point of view of the teacher who must first of all maintain a successful school. Not so "Pedagogues and Parents." It is a strong plea for the individual child, that his needs be considered, his nature studied, and that above all things he be kept out of the common mould which would make him the intellectual duplicate of all other children in the same grade. While there is much to be said for the teacher who must often do as she can rather than as she would, such books hasten the day when no teacher will have charge of more than twenty pupils at once and will thus be able to consider the special needs of each.

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"Edwin, when you and your brother fight so
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Edwin gave a little wriggle, at if in sympathy
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We would remind our subscribers that the
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THE CHILDREN
IF WE SAVE
TODAY
WE SHALL HAVE SAVED
THE NATIONS
TOMORROW

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VOL. XV. NO. 1
SEPTEMBER, 1905

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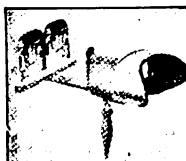
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Vol. XV

BOSTON, SEPTEMBER, 1905

No. 1

RIGHT ABOUT FACE

BY MARY D. BRINE

"NOW, right about face!" September cries.

"Right about face, and march!" cries she;

"You, Summer, have had *your* day, and now, In spite of your sorrowful, clouded brow, The children belong to *me*.

"Come, fall into line, you girls and boys, Tanned and sun-burned, merry and gay; Turn your backs to the woods and hills, The meadow ponds and the mountain rills, And march from them all away.

"Are you loath, I wonder, to say farewell To the summer days and the summer skies? Ah! the time flies fast, and vacation is done; You've finished your season of frolic and fun; Now turn your tardy eyes

"Toward your lessons and books, my dears. Why, where would our men and women be If the *children* forever with summer played? Come, right about face," September said, "And return to school with me."

—*Harper's Young People.*

GERMINAL EVENTS IN THE HISTORY OF SCIENTIFIC TEMPERANCE INSTRUCTION

BY MARY H. HUNT

THE hold alcohol has upon the human race is based on an entire misapprehension of its real nature and effects.

This is due to the fact that through its narcotic action on the nervous system it seems to be what it is not, and to do what it does not. By benumbing the nerves that report to the drinker's consciousness his real condition, it seems to give him strength when it is reducing his muscular ability; to give him courage while it is only making him foolhardy; to make him wise and witty when it is making him silly, inefficient, stupid, and inclined to criminal action.

Through the ages, people have believed that, moderately taken, alcoholic drinks are a safe luxury, while it is their nature when taken even in small amounts to create an uncontrollable desire for more that, gratified, ruins the drinker,

his children, and his children's children through the unrelenting laws of heredity. Thus through the ages alcohol, as a deceiver, has enslaved and destroyed individuals and families.

Through enervating that achieving ability and character that make a people strong and resourceful, alcohol has been and is a powerful factor in the downfall of nations. As a cause of degeneracy it today outranks all other perils to that rule and reign of the Christ spirit in human life and society which we call modern civilization. And all this peril, loss, and misery rest at the start on misconception, error as to fact, due to mistaking seeming results for the real effects of alcohol when used even in so-called moderation.

DISCOVERIES OF SCIENCE AS TO THE REAL NATURE AND EFFECTS OF ALCOHOL

But evil has its limitations. God's plan for the overthrow of alcohol as a destructive agency in human life and affairs is seen in three events or movements that may be called germinal. The first of these is the introduction into the study of the real, not seeming, nature and effects of alcohol, of the exact methods of experimental research and observation that have characterized the scientific work of the last fifteen or twenty years.

As a result of these methods, Professors Schmiedeberg, Bunge, Fick, and others of Germany, Richardson and Kerr of England, and Drs. Willard Parker, N. S. Davis, and A. B. Palmer in America discovered and taught that alcohol is not a food, not a stimulant that adds to strength, but a narcotic poison to human health, life, and efficiency. By the same methods, Professor Pasteur of France discovered that alcohol, instead of being as was supposed a good creature of God, self-generated in fruit juices and grain solutions, is the product of man's manipulation of the laws of decay whereby he changes a food to a poison. These discoveries and others that have followed are to prove the ultimate death-knell of alcohol as a beverage.

COLLECTION OF SCIENTIFIC FACTS CONCERNING ALCOHOL

Moral reaction against the evils of intemperance had prepared a cordial reception for these truths by a limited number. But if they are to reconstruct popular intelligence and habits they must reach the last man and woman in every avenue of life and before the alcoholic

appetite is formed ; that is, the future men and women must be taught these truths in childhood. To make this possible, somebody must gather for dissemination these scientific truths from the various contributing sciences from which they are derived, such as anatomy, physiology, hygiene, chemistry, therapeutics, toxicology, bacteriology, pathology, pedagogy, and psychology including child study.

Learned men, professors in great universities should do this work, we should say. But note how unlike human methods were God's plans in instituting a world educational movement against this greatest enemy to the coming of His kingdom in human hearts.

It was upon a woman in America that His spirit came, moving her to collect and plan for the dissemination of these truths, and it was upon a great company of women banded together in the Woman's Christian Temperance Union that His spirit came, moving them to carry these truths to all the people through the agency of the public schools. "The Lord gave the word, great was the company of them that published it." True, the searcher for these truths had had scientific training, and with it also something of that God-given compassion that makes "seeking to save" the impelling passion of the chosen workers in the Master's vineyard, but well she knew that unless she was in reality called to this work she would find it to be "the seat perilous."

The moderate drinker, the conscienceless traffickers in the drink, and the honest conservative doubter are always ready to challenge every claim of science against alcohol, and each of these claims must be defended by positive proof. Hence, for years, this searcher has kept up an exhaustive examination of the work of experimental and clinical observation on every phase of this subject in all lands, going to the depths for the last evidence for every truth, and deeper still to find if there is support for the critics' objections.

Through the "Index Medicus," medical magazines, and medical libraries, with her corps of searchers, cataloguers, and translators, she has brought together the gist of every important book or paper published on this subject. These are all on file, topically arranged for ready use. This clearing-house of ready information was at her request, in 1904, adopted under the name of the Bureau of Scientific Temperance Investigation by the National Woman's Christian Temperance Union, and its author was named the Director of the Bureau.

DISSEMINATION OF THE SCIENTIFIC TRUTHS CONCERNING ALCOHOL

What has this Bureau done for this and other

countries? When objectors to the passage of the temperance education laws have said there was no definite scientific truth to teach concerning the nature and effects of alcoholic drinks, this Bureau has furnished the refutation for this mistake without which the public school temperance education which is helping to make us the most sober of the great nations would not have been compulsory as it now is throughout the entire country ; nor would other nations as now be following our example in this matter.

Without this collection of the investigations of the laboratories and other researches of the scientific world on the alcohol question translated into English, there would not have been a storehouse of truth that *proves* total abstinence to be the plain teaching of science, to draw from for the school text-books for the 22,000,000 American children of school age who are now under temperance education laws.

Without the compilations of this Bureau, we should have lacked the ready defense that has shown the attacks groundless which have been made upon the truths against alcohol that are not only taught in our public schools, Sunday schools, Loyal Temperance Legions, from the pulpit and temperance platforms, but that are the basic reasons for prohibition of the alcoholic traffic.

The truths collected by this Bureau made possible the publication of the pamphlet, "An Appeal to Truth", which exposed the falsity of Professor Atwater's claim that he had proved alcohol to be a food. Without the work of the Bureau the "Reply to the Committee of Fifty" could not have been written. This "Reply" shows that all the costly experiments of that Committee, conducted through ten years, instituted to prove the indorsed text-books inaccurate, when honestly considered, proved them to be accurate, and that there is no safety in moderate drinking. "The Reply" was made a government document by unanimous vote of the United States Senate, February 27, 1904.

If we could not have definitely disproved the charges of the Committee of Fifty and those of other committees under various names, practically sub-committees of the Committee of Fifty, it is impossible to estimate how heavy would have been the blow dealt by them to the total abstinence teaching and to hygienic habits that are essential elements to individual and national greatness.

Again, human wisdom would have selected a renowned scientific man or body of men to have proved and exposed the fallacies of these attacks ; but that the majesty of truth might be more majestic and self-impelling, He who said, "I am the Truth," selected for this service one

whose personality would not overshadow the message of the great laws of nature on this vital question.

This Bureau of Investigation has gathered the body of truths from which are selected the facts that must be taught to guide the formation of such physical habits as are essential to a sound national physique, including the truths which correct popular fallacies and that warn against beginning to drink, and which are summarized in what we call our *American Course of Study* in temperance physiology, which is in successful use in this country.

Providence seems to have ordained that what the public would accept as the strongest stamp of accuracy should be put upon the truths to be taught the children of this age on this vital subject. Hence, when a year and a half ago the entire medical profession of the United Kingdom of Great Britain and Ireland petitioned for such public school study of hygiene and temperance as we have here in America, a committee of their number, among them some of the most

distinguished scientific men in the English-speaking world, recommended to the public schools of England, Scotland, Ireland and Wales the *American Course of Study* as containing the topics that must be taught to save a nation from degeneracy, and courteously stated on the title page of their scheme of topics that it is based on the scheme prepared for the schools of the United States of America. Thus the Bureau of Scientific Temperance Investigation, through its collected facts, is serving the English-speaking world.

Endurance is the crowning quality,
And patience all the passions of great hearts ;

These are their stay, and when the laden world
Sets its hard face against their fateful thought,
And brute strength, like the scornful conqueror,
Clangs his huge mace down in the other scale,

The inspired soul but flings his patience in,
And slowly that outweighs the ponderous globe—

One faith against a whole earth's unbelief,
One soul against the flesh of all mankind.

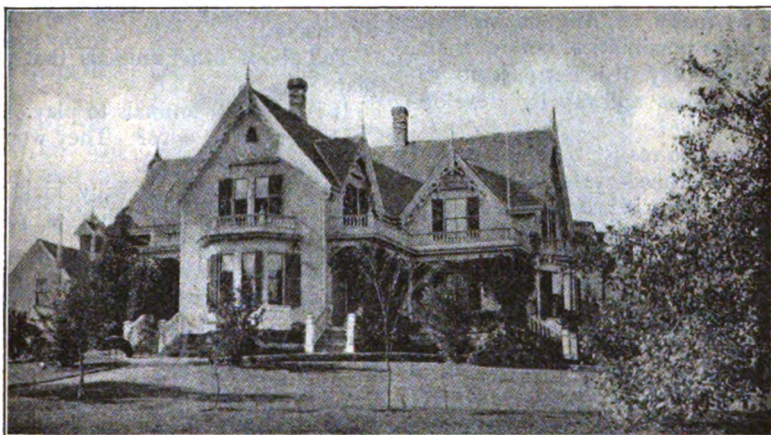
—LOWELL.

CAREFUL TOMMY

"Tommy!" cried Tommy's mother from the window, "didn't I tell you not to sit down on the damp ground?"

"Yes, mamma," retorted Tommy, "I'm not doing it. I wiped the grass with a towel before I sat down.—*Pittsburg Press*."

NEW SCIENTIFIC TEMPERANCE LEGISLATION



Hope Cottage, Hyde Park, Mass.
The birthplace of the temperance education movement.

THE legislature of the Bahama Islands has entered the long line of state and provincial law-makers that have made temperance instruction in the schools compulsory. The news comes through the

Rev. E. O. Taylor who is just back from a lecture trip through that region which has helped to secure this result. The passage of the law, however, is only the first step. Unless they provide a suitable course of study and textbooks for pupils' use the law will be a dead letter.

The same mail brings a letter from the Transvaal where Agnes Slack, of England, has obtained from the Acting Director of Education the promise of incorporating temperance instruction into the educational code which is soon to be revised.

"Along the roadside, like the flowers of gold
That tawny Incas for their gardens wrought,
Heavy with sunshine droops the golden-rod,
And the red pennons of the cardinal-flower
Hang motionless upon their upright staves."



Primary Lessons

FIRST YEAR

PLAY

INTRODUCTION

AT the beginning of the school year, the primary teacher often takes into her charge as many as fifty active little beings with limitless possibilities before them. For five hours in the day it is her part to direct these restless bodies and rapidly developing minds.

The teacher ought to realize that all parts of a healthy child's body need exercise for growth and development. This is just as necessary as food, and the instinctive love of play is Nature's provision for meeting the need. If the teacher would do her best work for the children, she will not repress this activity but, instead, will try to guide and direct it.

The child, when he comes to school, is practically unaccustomed to restraint of any kind. To sit still for ten minutes is painful and harmful to him. What shall the teacher do? Her task is plainly so to direct his natural activity as to teach him to control himself and to use his limbs wisely. He is like a playful animal. She must lead him along the paths of gentleness, of politeness, of soft speech, and attractive manners.

In the group before her there will probably be some who do not have proper home training. Such little ones have heard too often the impatient "Do keep still," or "Run out in the street and play." The street is not the place for learning gentle speech or sweet manners. Here, then, besides the opportunity to impart useful facts, the teacher has the chance to develop in the child self-control and proper bearing.

Hence, we will suppose she begins the lesson by saying to her class

(1)

PLAY OF ANIMALS

Boys and girls are fond of play.

Do you know anything else which plays?

A child answers that he has a dog at home which plays.

How many children have dogs? Do they all play? Do they play most when they are old or when they are young? What sort of games does a dog play?

He chases a ball or swims in the river for a stick. (Show picture of dog.)

What other animals like to play?

The cat and kittens.

What does kitty play? Did you ever see her chase a spool? What does your kitty play with?

The cat is very graceful—very soft in her movements—runs very quickly. (Picture of cat.)

What little animal plays in the trees?

The squirrel.

How does the squirrel look? How can he jump so easily from branch to branch? Notice his tail.

Tell about other animals that you have seen play.

It is good for animals to play.

Do you know why? They would not grow strong unless they did.

Have you ever seen baby kick his little feet and toss his hands? That is play for baby, and it makes him strong.

Boys and girls need to play. You must play a great deal in order to grow strong.

(2)

PLAYS FOR BOYS AND GIRLS

When it rains and you can not go out of doors what do you do? Do you ever play house? Tell me how you play? Have you a doll and a doll house? What do you do with them? What other toys do you have to play with?

What else do you play indoors? How do you play school?

When the sun shines where do you play? Why do you like best to play out of doors? What kind of games do you play there?

When you jump rope, how do you feel after a few minutes? You must never try to jump as long as you can. Do not jump more than five or ten times without stopping.

(3)

GAIN FROM PLAY

When you are playing house and go to call on your neighbor, how must you act? Why must you always be polite? What is politeness?

If you always try to be helpful to other people you will be polite.

What should you say when you meet your friend? When you leave? How should you

speak, loudly or softly? Why? How should you step? Why should you not stamp and make a noise?

When you are outdoors what can you do which you would not do inside? Why is it all right to shout and run outside when you should speak gently and step softly indoors?

When you run and jump and play outdoors, how do you feel? What makes you feel good?

Did you ever see a plant that lived in a dark corner? How pale and weak it was.

Children who stay in all day are also weak and pale. We get health and strength from playing outdoors? If you run races every day for a week you can run farther on Saturday than on Monday. If you play marbles every day you can play better at the end of the week. Why? Ability to do a thing well we call skill.

If John played outdoors every day, and had a kite and hoop, and ran races, while James stayed in the house and watched him through the window, which one would grow faster? Which one would have red cheeks, and which white ones? Which one would have a better time? You must be sure to play outdoors every pleasant day, if you want to be well and strong.

(4)

SENTENCES

To be written on the board, then read and copied by the children.

My cat plays.

The dog plays.

I like to play.

We play ball.

Play makes me grow.

(5)

GAME

Now, we'll play a game. We must remember that this is indoors and we must speak gently and walk softly. We will make believe that we are picking apples.

First, we go to the orchard where apples grow on trees. (Children march softly about room.)

Here are the apples. Let us pick them. (Children pretend to pick fruit from branches overhead and place them in baskets at their feet.)

Now we'll take them home. (March around the room again and back to seats.)

We will give them to mother. (Motion of taking from basket and putting on desk.)

Let us help mother make apple sauce for supper. (Teacher pares and cuts in pantomime and children imitate.)

We will put the apples on the stove to cook.

When they are done, we pour the sauce into the dish, (motion of pouring and putting into dish) and set it away to cool.

(6)

SONG

See the apples ripe and red!

They are hanging overhead.

Let us pick them as we play,

On this lovely autumn day.

THE OTHER WITNESS

"Roy," said the teacher in the opening exercises on the necessity for obedience, "if your mother tells you to get some wood, and you were to go out to some place where she couldn't see you, who would still see you?"

"Dad," says Roy, laconically. — *Little Chronicle*.



"A little work and play and sleep,
That's the way the children grow,
Don't you know."

A DOMESTIC TRAGEDY

BY LUCY FITCH PERKINS

My doll, my doll, my Annabel!

She's really feeling far from well—

Her wig is gone, her eyes are out,

Her legs were left somewhere about.

Her arms were stolen by the pup,

The hens ate all her sawdust up;

So all that's really left of her

Is just her clothes and character!



Grammar Lessons

FOURTH
YEAR

GROWTH DEPENDENT UPON FOOD AND DRINK

SYMMETRICAL development of the body, as well as good health in adult life, depends very greatly upon the manner in which a child is nourished during the earliest years.

Systematic training in physical culture will correct a number of evils, but nothing can quite overcome the effects of improper or ill-prepared food eaten as a regular diet during the period of childhood. Many a thin-limbed, hollow-chested person owes his or her condition to lack of knowledge in this respect, and crooked limbs and bad teeth may be traced in many instances to the same source.

Not all mothers understand what is best for the children from a hygienic point of view, and some of them rely almost entirely upon custom, or upon tradition, which, like custom, is valuable or not according to circumstances. Other parents are foolishly indulgent and permit their children to do as they please in the matter of food and drink as in other things.

Much may be done by the tactful teacher in such cases. She can lead the children to know for themselves, and in many instances her instruction will reach the parents through the children. She has the men and women of the future in her own hands for five hours every day. They are enthusiastic over any study which is rightly presented, and they are usually very proud of the knowledge they have acquired. Earnest and faithful instruction as to the kinds of food and drink to use and the kinds to avoid will be mentally assimilated by them to an extent hardly believable by people who have never been students of children.

NEED OF FOOD

Direct the attention of the class to plants of the same kind but of different sizes. Pansy or geranium plants are easily obtained and often they will be in the schoolroom window boxes.

What has caused the difference in size between the large geranium and the small one? The larger one has had a longer time to grow.

A number of days previous to giving this lesson, bring into the schoolroom two plants of the same size. Instruct the children to water one each day, and to neglect the other.

When the time for this lesson arrives, ask why one plant is green and healthy and larger than when it came, while the other is shriveled and the leaves are dropping off.

They will understand that the dying plant is starving to death, when you explain that much of the food necessary to its life is in the earth and can not be absorbed until dissolved by water.

Ask the children how much taller they are now than when they were measured last year. They can tell more or less accurately by thinking of the clothes they have outgrown. Measure one or two pupils and compare their height with that of last year, if, as is probable, the teacher has last year's measurements. Tell the other pupils to get some one at home to measure them, and bring the figures to school next day. Then, as you read off last year's list, each child can find how much he has grown in inches.

The healthy plant has grown not only in height but in size, and its leaves are larger. The plant has grown all over.

Do children grow all over, too? What about their outgrown clothes? These are not merely too short; they will not meet around the body. The sleeves are too small, and last year's shoes will not go on.

How many boys find that last year's hats are too small for them now?

What is the reason for this change? The food that you have eaten has had a great deal to do with bringing it about. Good food will nourish the whole body, and make each part grow as it should.

KINDS OF FOOD

Plant some grain seeds in wire netting tied over a tumbler of water, and have the children watch their growth.

Ask why the plants after a short time turn yellow and die. Why do they not grow so tall as the grain in the fields?

How would you like to have only one kind of food to eat? How many think one kind would be enough to keep the body growing?

Our plant that almost starved to death because we did not give it any water had one kind of food, for plants get one kind from the air. The grain plants need more than they can get from water and air, and different kinds of food are necessary for us in order to keep all parts of the body growing.

Write the names of some of the parts of the body, as bones, muscles, and nerves, on the blackboard.

Show the children where to find the page in their text-books that tells what foods will make strong bones and teeth. Let some one read it aloud and afterwards have all write the names of these foods on the blackboards or on paper.

In addition to oral instruction, children usually begin the use of text-books in this grade; but the printed page is a mystery to the child until he has been shown how to use it.

The wise teacher will impart this knowledge little by little. Always give page and paragraph at first, and have all passages read aloud, and explained if necessary, before being studied by

Write out a list of foods that would make a good dinner for St. Valentine's Day; for the Fourth of July.

Some foods are not good for us because they are hard to digest. Who can name some of these foods? Give the children the page in the text-book that tells of such foods, and have it read aloud.

We should eat foods that will help us grow.

NEED OF DRINK

Call attention to flowers that have been kept in water and are therefore fresh, and to others that have been allowed to fade for lack of water.

How do the fields and gardens look when there has been no rain for a long time? They



"Let heaven this one rich gift withhold,
How soon we find it is better than gold,
Beverage of life, health-giving water."

the class. Later on, show the children how to find from the index in their books any topic or chapter to which you wish them to refer.

Why is it important that we should have strong muscles? What kinds of food will give us such muscles? Help the pupils to find the names of such foods in their text-books.

How much meat is necessary? How often should children eat it? Name some animals that eat mostly meat. Name others that almost never eat it. Which class is more gentle?

Too much meat is bad for people. It is likely to make them bad-tempered.

People who work a great deal in the open air need more meat than people who work indoors. Why?

Grown people need more than children. Why?

What foods keep the body warm?

What foods are more cooling?

are parched and dry, because every plant needs water.

What would happen to a pet canary if it could get no drink?

Why do children get thirsty?

Our bodies would soon be parched and dry if we could get no drink. We could not live much longer than the poor plant that we treated so unkindly, if we had no water to drink.

GOOD DRINKS

The birds and animals have bodies that are like ours in many respects. They have muscles, bones, and nerves which must have food and drink to make them grow. What is the only thing they will drink? What teaches them to choose water? Does instinct ever direct them wrongly?

What is the best drink for children and every one?

Where does our drinking water come from? Why is it pure?

There is **another** drink that is very good for children. It is more a food than a drink, however, for it feeds every part of the body. Young animals take it as food, and it is the only food they need. Can any one think what it is?

Who can think of a nice drink for a cold day? Cocoa is good for us.

Who can think of a cool drink for a hot day? Lemonade is good. It is made from fresh fruit.

HARMFUL DRINKS

If Tommy holds his hand in a pail of ice-water for a short time, his hand will ache with the cold. His stomach is much more sensitive than his hand, and water that is very cold to the touch is likely to make the stomach ache. If very cold water is drunk at meal times it will delay the digestion of the food.

There is another reason why we should not drink water that contains melted ice. The ice may not be pure. You would not care to drink a glass of water that had been standing in a dusty room, yet the water might *look* pure. Ice which is cut from lakes or ponds may sometimes be impure.

If any one must drink very cold water, it is well to keep a bottle filled with pure water in the ice-chest.

Do you think it is a good plan to drink from brooks, or from pools beside the road? Why not?

Turn to the page in your books that tells about tea and coffee. Read it. Do you think these are good drinks for children? Why not? How do these drinks affect the skin?

There are other drinks that are bad for everybody.

What is beer made from? How do you know that it is harmful, when it is made from grain which is good to eat?

Turn to page — in your book, and see if you can answer this question.

James, you may read aloud what you find on this point.

All the other pupils look on your books while James is reading and see if he gives the right answer.

If you think he does not, raise your hands and tell what you think he has left out.

Will beer help those who drink it to grow strong and well?

Turn to page — and find what your book says.

Charlie, you may read this time, and all the class may turn to the same page to see if he gives the right answer. Raise your hands if you think he does not.

You are right. Beer never helps the body to grow.

It hinders the growth and dulls the brain.

Even a very little beer may make one want more of this drink until he can not let it alone.

AUTHORITATIVE QUOTATIONS

BEER-DRINKERS CAN NOT RESIST DISEASE

It is difficult to find any part of the confirmed beer-drinker's machinery that is doing its work as it should. This is why their life-cords snap off like glass rods when disease or accident gives them a little blow. This is not mere opinion; it is a well-settled, well-recognized fact. Physicians and insurance companies accept this as any other undisputed fact of science.—S. S. LUNGREN, M. D., Toledo, Ohio.

APPEARANCES NOT TO BE TRUSTED

The injury which beer does to health is not so easily seen as is the injury done by whiskey or brandy. The whiskey-drinker's appearance easily betrays him. But think of the round, contented face of the true beer-drinker! Does he not look as if he were in good health? How deceitful this appearance is, is only learned little by little as the alcohol in the beer, combined with the large amount of fluid, accomplishes its destructive work on stomach, heart, blood-vessels, liver, and kidneys.—RUDOLF WLASSAK, M. D., Vienna.

BEER-DRINKING IMPAIRS THE BRAIN

Persons under the influence of alcohol after taking no more than three-fourths of a liter of beer, showed impairing of perception, manifested by the omission of letters which they were asked to name at sight and by naming others incorrectly.—JOHANNES BRESLER, M. D., Kraschnitz.

BEER-DRINKING TENDS TO INJURE THE LIVER

The liver is the great laboratory, the workshop of the body. Any derangement of it means the derangement of all the rest of the vital machinery. There can be no health anywhere when the liver is out of order. Beer-drinking overloads it, clogs it up, producing congestion, and permanently cripples it.—W. T. RIDENOUR, M. D.

"The period of life is brief,
'Tis the red of the red rose leaf,
'Tis the gold of the sunset sky,
'Tis the flight of a bird on high.

"But one may fill the space,
With such infinite grace
That the red will tinge all time;
And the gold thro' the ages shine;
And the bird fly swift and straight
To the portal of God's own gate."

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"Sow with a generous hand,
 Pause not for toil or pain,
 Weary not through the heat of summer,
 Weary not through the cold spring rain,
 But wait till the autumn comes
 For the sheaves of golden grain."

THINGS THAT WILL NOT STAY UNSAID

THE opening of another school year brings to you, school officials and teachers, new opportunities for guiding and shaping the lives and characters of those who are to make or mar the future destiny of this nation with its wide spread influence upon the human race.

The telegraph, the telephone, and rapid transportation have made one neighborhood of the twentieth century world. Hence, beyond the walls of your schoolroom, through the accident and orient the results of your faithfulness or unfaithfulness will be ultimately felt.

OUR RESPONSIBILITY TO THE FUTURE

The part this country has just taken in the question of peace in Asia, instead of elating us, should lead us to feel our responsibilities to our own future and to that of the world. Just as at one time in human history the question what sort of a man was a Roman was one of world-wide importance, so, today, the success or failure of Americans as a people in living up to the ideals of sobriety, achieving ability, liberty, and justice which we are supposed to represent is a question not without its effect upon the civilization of the world. Alcohol with its related vices was a contributing cause to the degeneracy of the Romans. The dark ages followed the collapse of Rome, which was the inevitable consequence of the degeneracy of its people.

One of England's greatest physicians, Sir Frederick Treves of London, Surgeon to the King, recently said: "Alcohol is an insidious poison which has only one antidote, alcohol again." Another voice from Europe says, "We

must exterminate alcohol or it will exterminate us." This is a truth every nation, our own included, should write on its escutcheon.

NECESSITY OF EDUCATION

The statutes of this nation say that the evil nature of alcohol and other narcotics shall be taught in connection with the laws of health to the pupils in all the public schools of the United States. Just as surely as light dispels darkness will this education save us as individuals and as a nation from alcoholic and other narcotic degeneracy if this study is thoroughly pursued. An occasional talk against the moral evil of drinking will not do it, any more than a homily about arithmetic will teach the children how to add, subtract, and divide.

If your pupils as individuals, and if we as a nation are not to be "exterminated by alcohol" and other narcotics, the physiological reasons for obeying the laws of health concerning these substances and all matters of hygiene must be taught as a progressive, systematic study, from the first year of the primary for at least 30 or 40 lessons per year through the grades to the end of the first year in the high school, with well graded text-books in the hands of pupils who have text-books in other subjects, and with the same examinations for promotion from grade to grade as in other studies.

When superintendents of schools or school boards are asked to adopt as a working schedule the International Course of Study in temperance physiology which shows the teacher what should be taught in each grade and how, they are asked to provide that the greatest curse of the earth today shall be exterminated instead of its exterminating their pupils and our nation.

CONSEQUENCES OF NEGLECT

If the boys in your school are smoking cigarettes, it is *prima facie* evidence that some school superintendent or school board is not without responsibility; for if this instruction against the cigarette had begun with the first primary year, and had been kept up on the foregoing plan, these children would have exemplified that teaching. Today, the fumes of their cigarettes tell with pitiful prophecy of the coming results of somebody's official neglect, a cruel wrong to these little fellows and to that larger public which has a right to expect the schools to teach the children the peril in the deadly cigarette.

What some school men call "incidental instruction at the psychological moment" is beginning too late. It means lecturing the boy after he is caught smoking, and involves the more hopeless work of reformation instead of the hopeful one of formation.

If the pages of future historians shall record, which God forbid, that, failing to exterminate alcohol through public school education, alcohol exterminated the great American republic, the honest historian will say that this came, not because the teachers in the schoolroom were not ready to do their part in teaching temperance physiology, if it had been assigned a place in their regular, systematic school work, to be tested by examinations with time for this teaching as was given to other studies; but it came because of the failure of school officials to provide for what the law required.

THE CHILD IS IN THE MARKET-PLACE

AN APPEAL TO SCHOOL SUPERINTENDENTS AND
SCHOOL BOARDS

THE laws of America require the public school study of the nature and effects of alcoholic drinks and other narcotics as a part of physiology and hygiene, but do not explain what the nature and effects are. This is left for the text-books on these subjects to state, hence, school superintendents and school boards in choosing these text-books practically decide what the children shall learn on these subjects.

-Such boards are charged with the grave responsibility of deciding whether the children shall be taught the whole truth, plainly adapted to grade, that will give them the full physiological reasons for obeying the laws of health, including those that teach total abstinence from alcoholic drinks and other narcotics, truths that will fortify them to meet successfully the temptations of life, or whether these little ones shall be given evasive, indefinite teaching that will not warn them against the beginning to drink and to smoke that leads to ruin.

A scheme of topics that the schools should teach on these subjects to prevent individual and national degeneracy has been approved by the advocates of this form of education in this country and Great Britain.

All text-books that conform to this scheme are indorsed by a competent text-book committee of the Department of Scientific Temperance Instruction of the Woman's Christian Temperance Union.

If, at any time, you are asked to recommend for adoption in the schools under your care text-books on this subject that are not indorsed by the above committee, you are being urged to select books that are either deficient in quality, or quantity of temperance and other hygienic matter, or that are so badly adapted to grade that this teaching is unintelligible to those who are to use them. In either case, you are asked to rob the children of the warning instruction to which they have a legal right and which they greatly need in the ambushed walks of life.

The consequences of a mistake in the adop-

tion of text-books in any other branch are trifling as compared with an error in judgment here.

The liquor interests, owners of brewing stock and their sympathizers, fearing for the effect of this study upon their future profits, are saying through so-called conservative advisers,

"Better not adopt indorsed

books. They are too radical." The man who says this is advising what the brewers want.

The endorsed physiologies are as radical as the whole truth in their teachings. Every attempt to prove them inaccurate has signally failed. The children need these truths as a "lamp to their feet and a light to their path." The state soon to be governed by those now in our schools needs that all its children should have the utmost truth on these subjects to fit them for efficient citizenship.

School superintendents, school boards and committees, remember that the drink habit fastened on a child means that his future money-earning power is thereby mortgaged to the brewer and distiller, and his soul to death. While you are pondering what books you will give him, the child is in the market-place and the brewers are bidding. In the name of God, humanity, and patriotism, decide for the child and give him the whole truth.



"Right about face! September cries,
'And return to school with me.'"

CHARACTER BUILDING

BY MARY H. HUNT

WHETHER obeys an enlightened conscience can be trusted in the varied walks of life. We say he has character. He knows what he ought to do and he acts up to his light.

An important factor in character is knowledge of what one ought to do about questions that seem uncertain without such knowledge. Conscientious men of other times, lacking the enlightenment of our day, drank alcoholic liquors. Their ignorance of the real nature of these drinks and of the evils that inhere in their use did not avert the results to the drinkers themselves or others. They left a sad legacy of hereditary physical, mental, and moral weaknesses to their descendants.

What are we doing to prevent this in our day?

We had heard in the morning that Togo had sunk the entire fleet of Russian warships in the Sea of Japan. Wishing for the latest news, I bought an evening paper from a newsboy about twelve years old whom I happened to meet on the board walk at Atlantic City, New Jersey.

Handing him the pennies for the paper, I asked, "Do you go to school?"

"Yes," he replied, "but school is out now for today, and I am selling papers."

"What do you study in school?" I asked.

"Percentage, geography, drawing and history."

"Do you study physiology?"

"We had that last term," was his quick reply, "but we are to have examinations in it for promotion before school closes for vacation."

"Physiology teaches you to drink beer, does it not?" I inquired.

With an amazed look at my apparent ignorance, he replied, "No, indeed, there is alcohol in it."

"Well, what of that?" I asked.

"Why, don't you know, the alcohol gets into your nervous system, and if you want to draw a straight line you can't."

"What is your nervous system?" I asked.

Quickly came the answer, "It's your nervous system that makes the muscles go, and they make the bones go. Don't you know if a man is drunk he can't walk straight. The alcohol benumbs the nerves in his muscles so he goes crooked!"

"Beer must be a bad drink if it does all that," I replied. "I suppose you'll not drink it?"

"No, indeed, I won't," he said.

"Well, how about cigarettes?"

"They are bad, too. They spoil your brain so you can't remember. I never smoked one, and I never will."

"That is right, my boy. Always tell the truth, be honest, never drink anything that has alcohol in it, never use tobacco, and perhaps some day you will own a newspaper yourself."

"That I will, you'll see," he said, as he rushed for his next customer with the air of the future proprietor of a great daily.

In Chicago, our mid-continental metropolis, I happened to be the only passenger on the 'bus running from the railroad station to my hotel. A boy with a package jumped upon the steps. To prevent his being told to get down by the driver, I paid his passage for I wanted to talk with him.

"Do you go to school?" I asked.

"Yes," was the reply, naming the Chicago public school he attended, "but it is vacation now, and I am working for Marshall Field."

"Did you study physiology last year?"

"Oh, yes, we have that one term every year."

"Don't you get tired of having it so often?"

"No," he answered, "cause we have advanced work in it every year. It is interesting. It teaches you about your body and how to take care of it so you will be well and strong."

"What does it teach you about beer?" I asked.

"Oh, beer is bad stuff. It makes your brain dull," and, with an air of disgust, he added, "You can't make any kind of a business man if you drink beer, wine, or any of those liquors that have alcohol in them."

"How about cigarettes?" I asked.

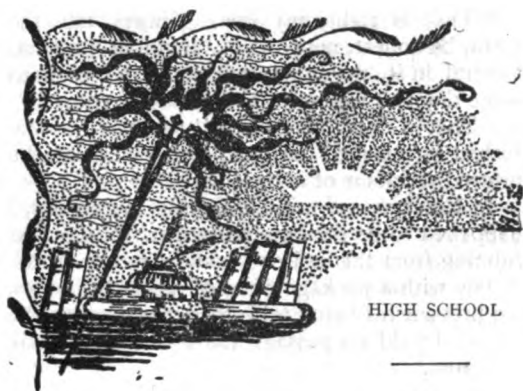
"They hurt your brain, too," he said. "A fellow that wants to be anything shouldn't smoke cigarettes."

A regiment of young soldiers from Seattle, Washington, was coming home from Manila soon after the Spanish War. In spite of the protest of the local Woman's Christian Temperance Union, the saloon-keepers met these soldier boys at the wharf with brimming pails of beer.

But these mothers were overjoyed as they saw the returned defenders of our flag, who during their last five years in the public schools had studied the *Pathfinder* physiologies, indorsed books adopted for that state, refuse the beer.

Stop the public school children anywhere in our land, and question them as were those mentioned here. You may not get so intelligent answers in every case, but you will see evidence that education against the use of alcoholic drinks, the greatest enemy to character, is reaching not a select few but the millions of the future men and women of this great republic, who will banish the last vestige of this traffic from our land. Each year this study is being better taught.

What are you doing to help?



THE SKIN

BOYS and girls entering the high school are usually more interested in facts than in theories. They want to know that a thing is true, and they are especially happy if they themselves can demonstrate its truthfulness. Experimental work appeals to them as almost nothing else will, and there are many simple experiments, particularly in physics, which will suggest themselves to every teacher, and which can be easily carried out in the schoolroom.

STRUCTURE OF THE SKIN

Begin with the study of the individual cell. Unicellular organisms may be observed with the aid of a compound microscope. A little chopped hay kept for a day or two in water from a stagnant pool will produce a multitude of these small creatures and among them you will get some *amœbæ*.

Let the pupils watch these and the other animalcules during several days, making pen-and-ink drawings of what they observe.

In this way they should get a clear conception of a living cell, and of its three parts, the wall, protoplasm, and nucleus.

When you are ready to take up the position of individual cells in the skin structure, make a large drawing on the blackboard, or on manila paper, showing the full round cells forming the inner layers of the dermis, and elongated ones becoming more and more flattened as they approach the surface which consists merely of dry scales, the dead, flattened cell walls.

Grapes, which the pupils can have in their own hands, will illustrate these different conditions, by pressure, and good models showing the entire skin structure may be easily obtained.

The pupils should keep notebooks and make their own drawings with India and colored inks.

SWEAT GLANDS

Call attention to the necessity for excretion. Wherever living cells exist there is action.

New protoplasm is being formed and waste matter discarded. Waste matter is dead, and as soon as life ceases decay begins. This useless matter must be eliminated from the body if we remain healthy.

Let the pupils take hand-glasses and examine the skin on the palms of their hands.

What are these tiny openings? Try to count the number in a square inch of surface.

Tell the class to look up the word, gland, in their dictionaries. Explain by means of a drawing the structure of a simple gland, a sac lined with cells.

The special function of any gland, that of secreting a fluid from the blood and originating a fluid of its own, may be illustrated by the work of the maple tree in assimilating air, water, and various mineral substances from the earth, and out of these materials manufacturing the sweet sap, a substance entirely different from any of those which contributed to its creation.

The sweat is a fluid which holds in solution impurities that are constantly being thrown out upon the surface of the body.

What does this necessitate? What would be the result of having all the pores closed?

BLOOD-VESSELS

The necessity for blood-vessels in connection with the sweat-glands will have been brought out in talking about the functions of these glands.

Twisting a red string about a small rubber tube, then tying the tube into a knot, will very well illustrate the relative positions of glands and blood-vessels. Leave several inches of the tube free to represent the duct.

Give each pupil a few inches of the tubing and some string, and let each one make a representation of a sweat gland. After the lesson let them make drawings in their note-books, using red, and black ink.

PAPILLÆ

Call attention by means of models or drawings to the structure and position of the papillæ. The ridges of the finger-tips may be studied by means of the hand-glasses, and the degree of sensibility of different parts of the body shown by simple experiments, such as applying the points of a pair of compasses to various portions of the skin and seeing at what distance apart the two points can be felt as two instead of one.

HAIR AND NAILS

These organs will be studied as modifications of the skin.

A hair may be placed under the microscope which will show the central shaft and the flattened cells forming the wall.

Use drawings to explain the follicle and bulb.

Tell the class to find from their books before the next day why some hair is light and some dark, and why hair turns grey, or white; also, why some people have a fair skin while others are dark, and what causes freckles.

What is the origin of the expression "hair-Tell episode?"

raising the class to find out the office of the oil-glands, and the necessity for them.

What causes blackheads? Explain that they may be prevented and often cured by simple cleanliness.

Why are finger and toe-nails necessary?

How do nails grow?

What is the effect of biting the finger nails? of scraping them with any sharp instrument?

THE SKIN REGULATES THE HEAT OF THE BODY

Exercise, or any unusual exertion, brings the blood to the surface. This increases the secretion of perspiration which is poured out over the skin.

How does this affect the body? Illustrate by the cooling of the air when the streets are watered on a hot day.

Simple experiments in physics will show how the body is cooled by radiation, conduction, and convection, and how the temperature is equalized by circulation.

EFFECTS OF ALCOHOL

Place an amoeba under the microscope, and call some pupil to watch it. Insert between the slide and cover glass a drop of water containing one part in one thousand of alcohol.* Let the pupil watch it again and tell the rest of the class what takes place.

The amoeba which before had been capable of movement and of throwing out portions of its body like arms, soon becomes motionless.

The alcohol has paralyzed it.

A similar effect is produced by alcohol upon the nerve cells in our bodies.

How must this affect the sense of touch?

By partially paralyzing the nerves controlling the muscles which enlarge or contract the blood-vessels of the skin, there is a rush of blood to the surface, and the body is too rapidly cooled.

What would be the result of frequently producing this effect on these nerves?

They would lose their power properly to control the blood-vessels.

How would that effect the circulation of the skin?

Explain the red nose of the drinker.

Anything that produces a paralyzing effect upon the nerve tissue of the body is a narcotic.

How does tobacco affect the skin? Describe the finger-tips of cigarette smokers.

In some parts of the body the poison nicotine may be absorbed through the skin.

What is smoker's cancer? The nicotine entered the system through the membrane of the throat. History records the death of several prominent men from this cause. Find the names of one or two of them.

AUTHORITATIVE QUOTATIONS

ALCOHOL INJURES THE MEMBRANES SURROUNDING THE CELL TISSUES

All the cell tissues of the body are surrounded by membranes on the integrity of which the silent work of building up the body depends. Alcohol, by its power to coagulate albumen, condenses, thickens and clogs these dialyzing membranes thereby hindering the endosmosis and assimilation of nutrient materials, and the exosmosis or excretion of breakdown, retrograde products and toxins from the body.—E. STUVER, M. D., Ph. D., Colo.

ALCOHOL PRODUCES DEGENERATION OF ORGANS

The only rational explanation of the greater longevity of abstainers over moderate drinkers, as shown by thirty-four years' experience in a British life insurance company, is that the result of drinking alcohol is to produce gradual degeneration of various organs and tissues so that in course of time these are unable to carry on their functions so as to resist the attacks of disease.—*British Med. Temp. Review.*

ALCOHOL CAN NOT ASSIST NATURAL GROWTH

Alcohol resembles the organic foods in the fact that it is oxidized in the body. It differs from them in that, while these can as a rule, in normal conditions, be depended upon to replace a given amount of body material, it can not so be depended upon.—HENRY M. HEWES, M. D., Boston.

MEMORY GEMS

Fasten the drink habit on a boy and his future money-earning power is thereby mortgaged to the brewery and saloon.

True liberty means total abstinence from all alcoholic drinks because it is the nature of such drinks to enslave the drinker.

*The teacher should prepare this water beforehand, so that no alcohol will have to be carried into the schoolroom.

THE QUICK MARCH OF TRUTH

THE rapidity with which truth so enters into the conviction of a people as to shape their habits depends upon how widely and persistently that truth is disseminated. If a new truth seems to be pervading the ideas and customs of the people, look for its cause; you can be sure it did not just happen. For instance:

In 1868, Professor Schmiedeberg of Germany began publishing his discovery that the true nature of alcohol is not that of a stimulant that adds to strength, but of a narcotic, and that the apparent stimulation is due to its weakening the controlling nerves.

But the application of this discovery to the popular custom of taking alcoholic drinks to "brace one up" for a difficult task was not made in Germany, for Schmiedeberg's discoveries rested in solemn silence in the musty archives of medical libraries, save as curious scholars here and there heard of them.

In England, between 1870 and 1876, Dr. Benjamin Ward Richardson made further discoveries concerning the impairing influence of alcohol as a narcotic upon the powers of the human body, and illustrated them with the story of the champion oarsman who found by experience that without alcohol he could maintain the steady nerve, the clear brain, and the endurance that defeated an opponent who used these supposed stimulants as an aid.

At that time, Dr. Richardson pleaded with the English people to have the important fact that alcohol is a narcotic which injures working ability taught the children in the schools of that country, but beyond a few annual lectures to a few schools it was not done.

In America, in 1882, Dr. A. B. Palmer, Professor of Materia Medica in Michigan University, brought back from his European study the new views taught by Professor Schmiedeberg and Professor Richardson. Dr. N. S. Davis added the testimony of his own investigations to these truths, and occasionally the subject came up for discussion in medical journals.

If, in America, the important truth that alcohol is a narcotic poison that impairs human working ability had been left to filter slowly down through medical literature to the people, the industrial history of this country would not have been affected by it in a hundred years; but the teaching that was pleaded for in vain for years by Dr. Richardson for England was speedily introduced in the United States.

Beginning in 1882, and continuing until all were included in 1902, the United States of America enacted laws state by state, and the National Congress for all schools under Federal

control, requiring that the young in the public schools shall be taught the nature and effects of alcoholic drinks and other narcotics in connection with physiology and hygiene. These laws do not specify what the nature and effects of alcohol are that should be taught. This is left to be settled by the school text-books on this subject.

Meanwhile, under the direction of Mrs. Mary H. Hunt, the author and leader of compulsory scientific temperance teaching of the Woman's Christian Temperance Union, the utterances and investigations recorded in the medical books and papers on all sides of this subject in all languages were being collected, read, translated, classified and put on file in the Bureau of Scientific Temperance Investigation. Thus an arsenal of demonstrated truth was built up. But these truths did not remain there unused.

Almost alone, during the earlier years, Mrs. Hunt saw the relation between individual and national well-being and universal popular knowledge of these facts, and insisted that these should be put into the public school text-books on physiology. This has been done in nearly all cases. Where it has not been done, the public has been informed in what respects such books are deficient and why they have therefore not received the official approval of the Department of Scientific Temperance Instruction.

Thus the American school literature on this subject has been created, and for nearly twenty years the children of the United States have been learning in school that alcohol is a narcotic that dulls the brain, injures the judgment and character, impairs precision and skill to do fine work, lessens strength and power of endurance, thus reducing the workman's money-earning power.

And what has been the result? Let other nations testify.

England, when she refused Dr. Richardson's suggestion that the public school children should be taught the foregoing facts, led the commerce of the world. Recently, she woke up to the fact that America was supplanting her. She sent a commission over here to find the reason, and the commission reported, among other causes, the greater sobriety of the American workmen, their more efficient, trustworthy, and consequently more productive and profitable labor. When inquiry was made for the cause of this greater sobriety, it was found that American youth are taught in the schools that alcoholic drinks injure working ability, and hence the majority of employers demand abstinence of their employes.

Germany, too, and other continental countries, eager for first place among the great nations, have been learning the same lessons. One of

their keen-minded philosophers, Justus Gaule, M. D., Professor of Physiology in the University of Zurich, Switzerland, in a recent article says: "In a rivalry between the old and new world on the basis of present ability to produce, the old world would have to go under."

He gives as a reason for this what he calls the alcohol-free air of America as compared with that of the countries of Europe, which he says is "a result of the instruction in the public schools concerning the influence of alcohol." He then adds, "The Americans by this instruction concerning alcohol have done their country a greater service than they think." To compete with these soberer Americans, he says, "We in Europe must broaden the instruction in our common schools by intelligent study concerning the powers of the human organism and the dangers which threaten it from alcohol."

More and more rapidly in America the requirement is being extended that the working-man must be sober to be of value to his employer. The Philadelphia *Bulletin* recently published the following:

"When the linemen in the employ of the Wyoming Light Company received their pay envelopes at Wilkesbarre on Saturday night, each man found along with his money a printed pledge to abstain from the use of intoxicating liquor while off and on duty, which he was requested to sign, and which the workmen will sign cheerfully in consideration of the good wages they receive."

"This Wilkesbarre requirement is not an exception, but is fast becoming the rule enforced by all corporations engaged in commerce, transportation, and manufacturing industries. Steam and electricity are the motive powers of the present industrial world, and in unskilful or unsteady hands are as perilous to life and property

as they are powerful. Hence, no railway, telegraph, telephone, or factory manager is willing to trust the management of costly equipment and the protection of hundreds of human lives to brains that are befuddled and nerves that are shattered by indulgence in drink."

Thus America, always quick to put a new idea to practical test, has illustrated the fact that the rapidity with which a new truth influences the habits of a people depends upon how widely and persistently that truth is disseminated.

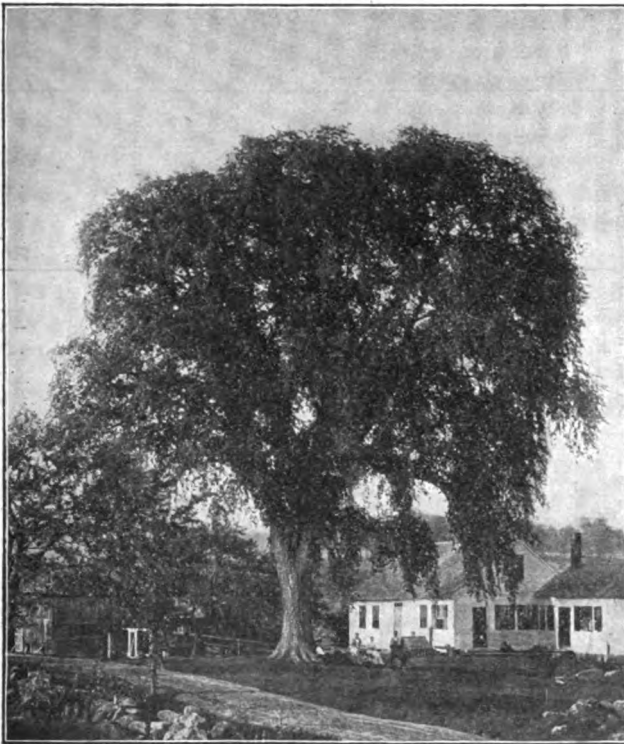
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Sept.	Development of body. Need of exercise.	Review parts used in work and play. Development of muscles.	Use and abuse of the grape. Review taste.	Skin; work of glands. Bathing. Clothing.	Success versus narcotics.	Respiratory system; lungs, throat, nose.	Care of mouth and teeth.	Clothing; harm in tight corsets, shoes, collars.	Skin; functions, cell structure, glands.
Oct.	Correct position; sitting, standing, walking.	Sense of feeling; location, how trained.	Teeth; shape, use, care.	Care of living and sleeping rooms. Cleanliness. Fresh air.	Brain, spinal column and nerves; how affected by alcohol.	Smell, taste, touch; how rendered acute. Alcoholic appetite.	Digestion and assimilation.	Respiration; breathing organs. Voice; how produced, how trained.	Fermentation. Alcoholic liquors; effect on mind, body, character.
Nov.	Food and drink; nutritious, harmful.	Sense of hearing; location, care, training.	Tobacco; how harmful, why.	Necessity of food and drink. Processes of growth.	Blood; under microscope, serum, corpuscles.	Eye and ear structure, care, training.	Liver; structure, functions, how affected by alcohol.	Food. Assimilation. Oxidation.	Circulation. Assimilation.
Dec.	Cider, wine, beer; effects. Cigarettes.	Sense of seeing; use of eyes, care, training.	How we grow. Need of exercise and sleep.	Circulation; heart, veins, and arteries.	Large arteries. Capillaries. Pulse.	Skin; layers, functions, care.	Excretion; necessity for, excreting organs.	Need of outdoor life.	Experiments on special senses.
Jan.	Parts which help us move about; legs, feet, toes.	Sense of smell; why important. Necessity of pure air.	Brain; location, use, care.	Respiration; lungs. Deep breathing. Exercise.	Hand and foot compared, contrasted. Effect of narcotics.	Temperature of body, how maintained. Clothing.	Lung development; how to prevent consumption.	Special senses; how made more acute.	Structure of body. Composition of bone and muscle.
Feb.	Parts used in play or work; hands, fingers, thumbs.	Sense of taste; importance. Cigarettes.	Nerves of sensation and motion.	Nerves of sensation and motion.	Bandages for cuts; how to stop bleeding.	What constitutes a complete food; alcohol why not a food.	Effect of alcohol on tissues. Appetite for alcohol caused how.	Secretion; necessity for. Glands.	Common poisons; antidotes for.
Mar.	Parts necessary to life; head, trunk.	Food. Table manners. Beer, wine, cider.	Bones; aids to growth, correct position.	Fruit and grain poisons; effect on nerves and blood.	Proper positions in sleeping, working, sitting. Backbone.	Blood; serum, corpuscles. Effect of alcohol.	Brain and nerves; nerve tissue, ganglia, spinal cord.	Muscles; voluntary and involuntary, training.	Heat of the body; food, exercise, rest.
Apr.	Care of body; cleanliness.	Voice; harsh or pleasant, training.	Muscles; care, aids to development.	Spinal column and brain; location, uses, care.	Digestion; teeth, mouth, stomach, intestines.	Muscles; use, development, care.	Sympathetic system; habits.	Tobacco; effect on eyes, heart, throat.	Patent medicines; many contain alcohol.
May	Need of shelter and clothing.	Bathing; necessity for. Care of skin.	Deportment on the street, at school, and at table.	Accidents; bleeding from nose, cuts and burns.	Need of sunshine and rain. Vital organs.	Bones; kinds, uses, attachments, growth.	Effect of alcohol and tobacco on body.	Fermentation; nature of, how produced, products.	Success from a physiological view point.
June	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.

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Vol. XV

BOSTON, OCTOBER, 1905

No. 2

OCTOBER

BY GEORGE W. SHIPMAN

MONTH of fruits and falling leaves,
Under the opalescent skies
The vagrant summer idly lies,
While coming Autumn deftly weaves
Rare tints for tall ungarnered sheaves
Of golden-rod, kissing the eyes
Of purple asters as she dyes
The vine that swings beneath the eaves.

And all the bending hedge-rows seem
A Joseph's coat of colors. Hues
That shame the rainbow's royal arch
Set all the harvest-fields agleam
With beauty, fresh with fragrant dews,
To crown the season's onward march.

A PROVIDENTIAL BENEFICENCE

BY REV. ALBERT H. PLUMB, D. D.

Published by request

The author of this article is the pastor of a large and influential church in Boston, the Walnut Avenue Congregational Church. He has been chairman of the Advisory Board of this Department since its early days and is thoroughly familiar with the work that has made temperance education compulsory throughout the country.

I COUNT it one of the highest honors of my ministry to have had the privilege, for nearly twenty-five years, of personal knowledge of the growth and power of the American Method for the Prevention of Intemperance, by laws requiring the findings of science on the subject to be taught to all pupils in all public schools.

It is not a question whether such instruction is calculated to do good. That is a necessity. Knowledge is power always. You can put salt in a barrel of meat and go away and leave it, feeling sure its saving influence will continually be felt. So with truth, although the living man, unlike the dead tissue, can resist its power. That power, however, is always there, and always operative.

The recent parliamentary commission in England says, "The Committee believe that more may be done to check the degeneration resulting from drink by bringing home to men and women the fatal effects of alcohol on physical efficiency, than by expatiating on the moral wickedness of drinking."

Prove to a boy that alcoholic drink, even in

small quantity, has power to injure the healthy body, and he will be apt to say to the proffered mug of beer: "You can't fool me. I know you. I am not going to butt my head against a wall, or load myself in the race of life."

Already this teaching has led many great corporations to require total abstinence of all in their employ, for economic law and moral law are from the same Divine Hand. As we look at the stupendous fact that in the short space of twenty years, a nation of eighty millions of people were led to enact these laws, we exclaim, "What hath God wrought!"

It is not fanaticism, not trickery, not jobbery. It is the force of the better reason; and for one who has been in close touch with the entire movement it is impossible not to look with adoring wonder on the way in which the beneficent Giver of all Good accomplished this marvellous result. In answer to innumerable prayers, God has given to vast numbers of the women of our land a lofty moral enthusiasm, a self-sacrificing devotion, and a masterly wisdom of procedure in this undertaking, which has compelled admiration and assured success.

But when God would prepare a great leader for a great movement he begins early and continues long. To know what a woman is and can do, learn from whence she came and what her offspring is. Learn her inherited tendencies, tastes and traditions, her latent capabilities, her endowments, acquirements, environments, opportunities, co-workers, and also what she has done.

On a fourth of July, near Salisbury, Connecticut, there was born one whose maternal ancestor was a direct descendant of the English cavalier, Edward Winslow, who, coming to this country on the Mayflower, was one of the early governors of the Plymouth Colony, as well as of the gifted and godly Thomas Thacher, who was born in Salisbury, England, in 1620, and who became a learned physician and eminent divine, the first pastor of the Old South Church, Boston. Her paternal ancestors were early connected with the Salisbury iron industry, as her able and accomplished son was with the aluminum industry of Pittsburg and Niagara. This justly celebrated young scientist, an expert chemist and successful manufacturer, Captain Alfred E. Hunt, was heart and soul in the work of his mother, herself a professor of chemistry, and, until he gave his life to his country in the Spanish War, exemplified and assisted her pious and philanthropic qualities and achievements.

Mrs. Mary H. Hunt has compiled the largest collection in the world of the widest and latest results of scientific thinking and experiment in her specialty; has addressed more legislative bodies than any other person living, braving the fever-laden heats of the south and the piercing blizzards of the north, in her frequent and wearisome journeys in disseminating this knowledge and impressing its importance upon lawmakers, teachers, and the public at large.

In the indispensable work of securing able authorities to prepare, and competent publishers to issue school physiologies embodying the facts and free from demoralizing falsities, she has so far overcome the finical quiddities of certain apathetic, captious, and opinionated educators, and the timidity of many time-serving school authorities, and their unworthy deference to the self-indulgent ideas of the luxurious classes, and to the virulent opposition of the unscrupulous liquor interests, that the largest publishing houses are now eager for her indorsement, always gladly and gratuitously given when desired, that their text-

books may find a market by satisfying the demands of an enlightened public sentiment in teaching the absolute truth.

"You will ruin the cause if you are so extreme. Why not be more conciliatory?" cautious friends have said. But she has been unswervingly insistent that the children shall have the solemn warning of the plain truth that alcoholic beverages are in no true sense a food, but a dangerous poison always. And now great bodies of learned experts and physicians in England are reiterating her demands as the best possible prevention for the degeneracy which threatens their life.

From all over our land, and from across the seas are continually coming to her appeals for counsel and for facts to aid in the never ceasing fight to retain and enforce the temperance instruction laws. For of course the insatiate liquor power is incessant and persistent, by open assaults or by indirect subtleties to parry or

weaken the blows that science is giving it.

All this vigilant guardianship of the reform costs money, and it is a sorrow and a wrong that the time and strength of this heroic woman must be consumed in the effort to provide for this necessary expense. Some day she will die, and it is my hope and prayer that before that day a fund will be provided whose income will enable the work of this Bureau to go on. Her accurate knowledge, her clear vision, her forceful speech and facile pen, her reverence for God's truth embodied in natural law, her generous appreciation of her great and noble army of intelligent and efficient co-workers, her humble piety and prayerful faith in God have placed her before my mind as one of the most unselfish and useful women of our time, entitled to

the lasting gratitude of every lover of mankind.

Such personal words would not be written here but for the fact that moderate drinkers, objectors to the study in the lower grades where it reaches future majorities—the law-making power—and other liquor sympathizers, unable to meet the

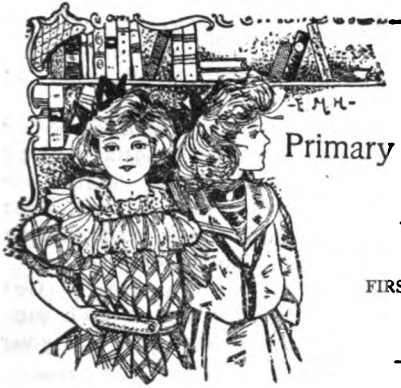
science and logic of her appeals that have carried legislatures and other tribunals, have resorted to their only argument, namely maligning of motives, hence, from the beginning of her work till now, she has wrought amid storms of calumny and against false insinuations of covert assault. But unmoved by praise or blame her cause has marched steadily on, because it is God's cause. A woman who has given years of unpaid and most arduous service, and many thousands of dollars for this holy cause, deserves at least this plain statement from one who has known her long and well.

LOVE

Love is always building up. It puts some line of beauty on every life it touches. It makes life seem worth while to every one into whose eyes it looks. Its words are benedictions. Its every breath is full of inspiration.—Sel.



"October turns the fleecy clouds to boats,
And sails them on a sapphire lake."



Primary Lessons

FIRST YEAR

POSITION

INTRODUCTION

AS one looks about a schoolroom, it is no uncommon sight to find at least half of the pupils in bad positions. If this fault is not corrected while the child is young, it will be hard for him to acquire the correct attitude later.

One cause for bad position may be fatigue. Then brisk movements will rest the tired little back and legs. Possibly the chair and desk are not the right size. Whatever the cause, the effects are the same. They usually come in this order: fatigue, bad habits, physical weakness, or even deformity.

The remedy is simple—comfortable chairs and desks, frequent change in work, instruction as to proper ways of sitting and standing, exercise, and especially watchfulness on the teacher's part.

REASONS FOR GOOD POSITIONS

Jennie and Marjorie were next door neighbors. When they began to go to school, Jennie's mother said to them both, "Sit up straight in your seats. Then you won't get so tired and you can learn your lessons better."

They both promised to remember what she said. Marjorie often thought of it during the day. Then she straightened up and put both feet flat on the floor.

Jennie forgot, and lolled in her seat.

So it was every day. Marjorie tried to stand and sit just as straight as she could, but Jennie said:

"Oh! I don't care. I can't sit up straight all the time."

At the end of the year, Marjorie had grown tall. She held her chest high and her head up.

But Jennie—poor Jennie! Her mother had to buy her a pair of shoulder braces to hold back her shoulders, because she had not tried

to keep her back straight. She had to wear the braces for several months, until she learned to sit and stand correctly.

Show how Marjorie sat; how she stood.

How ought we to stand? Straight. (The teacher illustrates as she asks these questions and class follow her example.)

Where should both feet be?

How shall we hold the chest? the head?

STANDING EXERCISES

Let each stand as straight as possible, both feet on the floor, head up, chin in, arms at sides, shoulders back.

Rise on toes, sink, rise, sink.

When you rise, your head ought to go straight up and not forward. The weight should rest on the ball of the foot, and not on the heels.

Place a piece of cardboard on the head while taking the following exercises:

On toes, rise, sink.

Forward, march, one, two.

The cardboard ought not to fall off.

WAY TO SIT

Class sit—way back in your chairs. The lower part of the back ought to touch the lower part of the chair. Feel and see if it does.

Are your feet both flat on the floor?

Hold your head up, chin in, hands in lap.

SITTING EXERCISES

Bend forward, backward.

Breathe in.

Breathe out.

Hands clasped behind head.

Bend to left.

Up.

To right.

Up.

Forward.

Backward.

Hands in lap.

Remember always to sit way back in your chair. Never slide down.

What shape will your back be if you slide down in your chair?

(Draw lines on board to show a straight and a curved back.)

Try to have your back like the straight line.

If you try now to sit up straight, and to stand straight, you will not stoop or have round shoulders when you grow up.

SENTENCES FOR THE BLACKBOARD

I must sit straight?

I must stand straight.

I must keep my back straight.

I must hold my head up.

PARTS OF THE BODY

SECOND YEAR

TO avoid self consciousness on the part of the child, refer to the bodies of animals as far as possible in giving the lessons. Children are delighted to have a pet animal in the schoolroom. When this is not feasible, a picture may be substituted.

For the following lessons, use a picture in connection with observation of the animal.

COMPARISON WITH A BIRD

Material. Canary bird and picture or black-board drawing of one.

Who has come to visit us this morning? What is his name? (Show bird and picture.)

How is Dick different from the bird in the picture? (Question until you bring out the fact that Dick is alive, the picture is not.)

What things can you do that Dick can do? What can he do that you can not do? What can he do better than you can do?

How is Dick's mouth different from yours? Why is it different?

What does he have instead of fingers? Why does he need claws instead of fingers?

How does he get about when you let him out of the cage?

Can you see his ears? Do you think he has any? (Show where they are.)

Please stand and find a part of your body that is different from Dick's. How does it differ?

LOCATION OF PARTS OF THE BODY

Please touch and name the parts of the body with me :—head, neck, shoulders, arms, hands, trunk, hips, thighs, knees, legs, feet. (Call upon a number of the children to name a part of the body and show its location.)

John may come forward and touch the parts of his body that will bend. What is the name of these parts?

(Call upon the children to give the name of one or more of the joints and tell their use.)

THINGS TO BE REMEMBERED

The animals are our friends.

They have bodies just as we have.

Our bodies are made up of parts fastened together.

The joints bend when we move the body.

(If "Things to be Remembered" be repeated by the children after the teacher, on days intervening between the lessons, the gain will be greater. It is not necessary that these statements be memorized, word for word.)

THE BODY AS A WHOLE

THIRD YEAR

Last year you learned many things about the body.

What is the most important part of the body? Why is the head the most important part? What can you tell about the head? (After the class have told what they remember, ask what good use they have made of their heads today.)

What have you learned about your hair?

What did you learn about your eyes? (Get as many facts as time will allow on each subject.) To what good use have you put your eyes today?

What can you tell about your ears, your mouth, your nose?

How many of you are sure that you always breath through the nose?

What did you learn about the trunk of your body? How many of you think you stand and sit straighter than you did last year?

What can you tell me about your arms? How have your arms changed in the past year?

What did you learn about your hands? What can you do with your hands that you could not do a year ago? What can you do more easily than you could do then?

What can you tell me about your feet? In what ways can you use them better than you could a year ago? What have you learned about the care of the feet?

What have you learned about the use of tobacco? Of alcohol?

We shall learn other things about the body this year?

THE HEAD AND FACE

You may touch and name with me the parts of the head : skull, crown, back, sides, scalp, hair, ears.

Of what use is the skull? Why is it hard? Why is the top of your head called the crown?

Of what use is the scalp? What care does it need?

Of what use is the hair? How should you care for it?

Why is the head round instead of square? Why round instead of pointed? What different shaped heads have some animals you have seen? Each animal has a head shaped to its needs.

Please touch and name with me the parts of the face : forehead, eyes, temples, cheeks, nose, mouth, chin.

Why are your eyes in the upper part of your body? The temple bone is very thin. We should be especially careful not to hit the temples.

Of what use is the nose except to smell with?

Why is your mouth in the lower part of your face?

What parts of the head can you move? When do you move the chin?

THE NECK

Please touch the part of the body you find below the head. How does the neck help us? Touch the throat, the sides of the neck, the nape.

I am thinking of an animal that has no neck. (Show picture of a frog or toad if necessary.)

Can the toad turn his head as you do? How can he see things that are to the right and left of him? (If no one knows, ask the children to observe how a toad's eyes are set, and report.)

THE TRUNK

You may stand and touch the parts of the trunk with me : shoulders, chest, abdomen, back, sides, waist, hips.

There is another use of the trunk besides supporting things. What is it?

When you have things you like very much and do not wish them spoiled by dust and handling, you sometimes put them away in a trunk. You say these things are precious. The parts of the body that the trunk contains are precious because they are so useful.

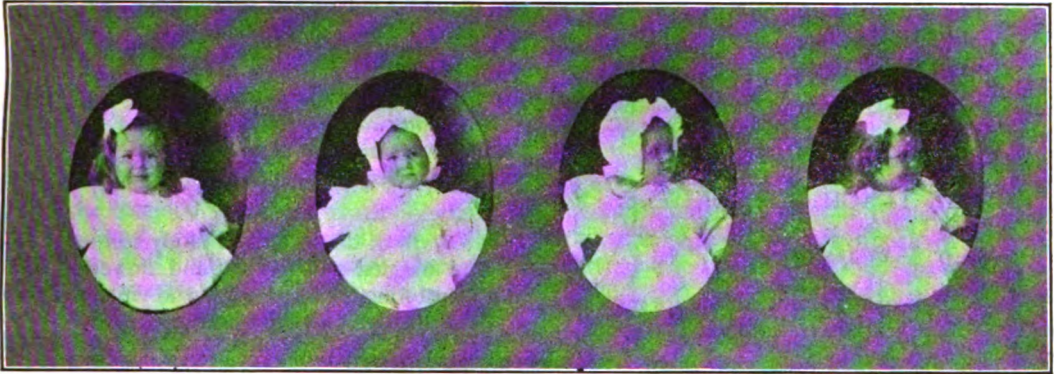
THE ARMS AND HANDS

You may name with me the parts of the arm : upper arm, elbow, fore arms, wrist, palm, back, fingers, knuckles, ball, tips, nails.

Why do we need so many parts? Why are there more parts in the hand than in the arm?

What have most animals in place of arms? What can they do with the fore legs and feet which we can not do? What can we do that they can not do?

Why does your hand have fingers at the end instead of having the hand in one piece?



"The world is such a pleasant place for any child to be,
With pleasant things to sing about and pleasant things to see."

What do you see out of doors that has a trunk? What does the trunk support?

Mary may stand and tell me where her shoulders are and their use.

Harry may tell me where his chest is and what it does when he breathes.

Nellie may touch her backbone and tell what it helps her to do. Who knows another name for the backbone? In how many ways can we use the spine?

The spine is made of twenty-four small bones ; that is why we can bend it in any direction.

Is your spine vertical or horizontal? Why is it vertical? Why is the spine of most animals horizontal? How can you make your spine horizontal?

What does your body trunk contain? (Lungs, heart, stomach.) Of what use are the lungs? Of what use is the stomach?

There are other parts of your body inside the trunk, but we will not speak of them today.

How do your nails differ from those of the cat and dog? Why do they need claws? Why would claws be troublesome to you?

Why are there more parts in the hand and fore arm than in the upper arm?

What kinds of work need strong arms? What kinds need limber fingers and a delicate touch?

THE LEGS AND FEET

Which can do more things, the fore feet of animals or the arms of people?

What parts of our body do we use when we move about?

What things grow, but do not move from place to place?

I will write the name of each part of the lower limbs on the board, and you may name and touch it : hip, thigh, knee, leg, shin, calf, ankle, instep, heel, ball, toes, joints, nails.

Please tell me some things you can do with

your lower limbs? Why do your thighs need to be larger than the lower leg?

Can you do as many things with your feet as you can with your hands? Sometimes people who have lost both hands learn to write or paint with their toes. They learn to hold the pen or brush with the toes.

What kinds of work need strong legs?

What kinds of games need legs and feet that can move quickly? Ask the class how many legs a spider has, a fly, a snail, a bee, a wasp. If they do not know, suggest that they observe and report.

We have gone from our heads to our feet and have found that our body has many parts.

THINGS TO REMEMBER

My body has a head.
My body has a trunk.
It has upper and lower limbs.
Each part has a work to do.
I have a wonderful body.
My body has many parts.
They are all useful.

THE TEACHER'S EXAMPLE

BY JENNIE DAVY

The schools of today are calling for men and women who are teachers from head to foot,—in heart, brain, and hand.

Let the whole school life be conducted in accordance with the highest standards of morality. Teach the pupils to be upright, practical and efficient; be yourself an actor, not merely a critic of the school. Criticism is a very good thing, but example is a much better one. And remember, the softer virtues need cultivation as well as the stronger ones.

The real work of education is to fit the young for the duties of life. And there are lessons for these young people in the lives of their teachers much more potent than all the teaching of the wisest books.

It is both a duty and a privilege to stand forth as an example and to be an inspiration to the school; serving it with a zeal and devotion that never tire. Life never gave so much and never asked so much of any other persons as of the public school teachers. They must live that Scripture text: "The children of Israel started out to go to the land of Canaan, and to the land of Canaan they went."—*Western School Journal*.

OCTOBER WOODS

BY IDA WHIPPLE BENHAM

The forest has opened the chestnut burrs,
And the nuts fall lazily, two and three;
The squirrel chatters, the partridge whirs,
And the red-capped woodpecker bores his tree.

Oh, lightly and lightly the birch leaves float,
Like golden butterflies loosed in spring;
And bright as the sails of a fairy boat
The walnut leaves take wing.

Now come, now come, far down the lane
The asters beckon, the robins call!
The shrunken brook grows broad again,
And leaps in a laughing waterfall.

Over the style, and over the bridge,
Adown the path where the meek cows stray,
By glen and hollow and windy ridge
Let us follow the woodland way.

*See! how the marvelous cloth of gold—
A Tyrian tapestry woven fine—
Wide as we wander is still unrolled;
Rustling under your feet and mine!*

The breath of the woodland is joy to breathe—
The mingled odors of leaf and flower,
And clustering fruit where the wild vines wreath
The oak tree's mossy tower.

Softly into the vistaed wood
Through painted windows the sunbeams smile;
The hushed winds walk in pensive mood
Down many a solemn Gothic aisle.

The golden clouds hang low in air;
Wrapped in their folds the late sun rests;
And the tall trees stand as if in prayer
With their beards upon their breasts.

"The maple does not shed its leaves
In one tumultuous scarlet rain:
But softly when the south wind grieves
Slow—wandering over wood and plain,

"One by one they waver through
The Indian summer's hazy blue,
And drop at last on the forest mould
Coral and ruby and burning gold."

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"The days are still, and the long nights hushed,
And the fair sky burns like the heart of a rose;
And the woods with the gold of autumn flushed,
Lavish their splendor in crimson snows."

THE PREPARATION OF BOOKS ON PHYSIOLOGY AND HYGIENE

BY WINFIELD S. HALL, M. D., PH. D.

Professor of Physiology, and Dean of Northwestern University Medical School; President of the American Academy of Medicine; President of the American Medical Society for the Study of Alcohol and Other Narcotics.

EVERY state requires that its children in the common schools be taught physiology and hygiene, and that a part of this instruction shall deal with the nature of alcohol and other narcotics and with their effects upon the human body. While these laws require that the *nature and effects* of alcohol be taught, they do not specify what either is. The question as to what should be taught on the nature and effects of narcotics and stimulants has been left for authors and publishers to decide. Their decision has been governed partly by their individual ideas as to the best presentation of the subject, and partly by their estimate of the public demand.

At first, the result was a large number of books or series of books on the subject of physiology and hygiene only a few of which measured up to the best that was possible at the time of their publication. It became evident very soon that two things were necessary if these laws were to accomplish the good that their friends expected.

(1) It was necessary that the demonstrated truths that prove total abstinence to be not fanaticism but to be founded on experimental science should be collected from their many sources, and that the public be educated to demand that the children be taught the truth and the whole truth regarding alcohol and other narcotics.

(2) It was necessary that some organization friendly to the laws and interested in their wise administration approve the books that were to be presented to the public.

COLLECTION OF SCIENTIFIC FACTS

So it came about that in the march of events, which for lack of a better term is called progress, a student of this question, Mrs. Mary H. Hunt, of Boston, later the official head of the scientific temperance instruction movement of the Woman's Christian Temperance Union, began and continued as a personal study that search for and collection of the findings of science on this subject which now constitute the Bureau of Scientific Temperance Investigation.

The Bureau directs its activities toward the collection of results of research and of the discussion of these results in the scientific journals of all countries where research is conducted. This colossal work has been carried on for about twenty-five years, and has involved the expenditure of many thousands of dollars for journals, books, translations, copying, and topically cataloguing. The result is that nowhere else in the world is there so complete and easily accessible a collection of scientific literature on alcoholic drinks and other narcotics as exists in this Bureau of Scientific Temperance Investigation.

Its collections have been of fundamental importance in at least two directions:

First, authors and publishers have always been accorded every assistance in determining just what enjoys the position of demonstrated truth. Take, for example, the following statements:

Alcohol is a constituent of all fermented and distilled beverages; alcohol is a poison; alcohol does not nourish the body,—it is not a food; alcohol is injurious in small as well as in large quantities; the most moderate beverage use of alcohol is unsafe because it has the power even in small quantities to create an uncontrollable and destructive appetite for more; alcohol decreases muscular efficiency; alcohol disturbs the functions of nerves; alcohol makes the special senses less reliable in their messages; alcohol does not raise but lowers body temperature; all tobacco contains nicotine; nicotine is a poison.

How many of these statements may an author make with full assurance that his position is unassailable? The Bureau of Scientific Temperance Investigation is able to put into his hand within one week every published statement on any of the above topics by any man of standing among scientists. Such aid is of inestimable value to the author as well as to the cause of temperance education.

APPROVAL OF WORTHY TEXTS

Second, the approval of the Department of Scientific Temperance Instruction is an assurance to the author, the publisher, and the public that the book in question contains no assailable statement,— it vouches not only for the scientific accuracy but assures the public that the book is pedagogically abreast of the times.

But for the wisely directed activities of the Bureau of Scientific Temperance Investigation the laws would have failed of wise administration and would have become dead letters or would have been repealed.

Many attempts have been made to cause the repeal or the modification of the laws, but these attempts have miscarried because those demanding the changes could find nothing essentially untrue in the books nor could they find any reason, that appealed to the public, why these truths should not be presented to the school children.

Danish physicians have formed a temperance society, and have issued a warning, setting forth the evils of alcohol on the human body, which is posted in all the railway stations of the country.—*American Issue*.

"Grandma, papa costs me an awful lot."

"How, sonny?"

"Why, gramma, when I'm good all day he gives me a penny, an' when I'm bad I have to give him a penny."—*New Voice*.

I am not bound to win but I am bound to be true. I am not bound to succeed, but I am bound to live up to the light I have. Stand with anybody that stands right. Stand with him while he is right, and part with him when he goes wrong.—ABRAHAM LINCOLN.

"Can't I go out and play in the garden, mamma?"

"Certainly not, child. You must stay in and study your nature books."—*A True Republic*.

THE LAST DAY OF AUTUMN

Like a spirit glorified
The angel of the year departs, lays down
His robes once green in spring,
Or bright with summer's blue;

And having done his mission on the earth,
Filling ten thousand vales with golden corn,
Orchards with rosy fruit,
And scattering flowers around,

He lingers for a moment in the west,
While the declining sun sheds over all

A pleasant farewell
smile,
And so returns to God.
—From the German.



I have so many children I don't know what to do.

TEMPTING PROVIDENCE

"Mabel," said her mother, "don't touch the cake while I am away. Remember, God sees you."

Five minutes later Mabel was found on a chair by the table, one finger expectantly caressing the fresh white frosting.

"Why, darling," cried her mother, "what did you do that for?"

"I wanted," said Mabel, "to see what God would say."—*Lincoln Magazine*.

AUTUMN BONFIRES

BY ROBERT LOUIS
STEVENSON

In the other gardens
And all up the vale,
From the autumn bonfires
See the smoke trail!

Pleasant summer over
And all the summer flowers,
The red fire blazes,
The gray smoke towers.

Sing a song of seasons!
Something bright in all!
Flowers in the summer,
Fires in the fall!

THE INTERNATIONAL COURSE OF STUDY

WHAT IT IS AND WHY WE SHOULD URGE ITS ADOPTION

BY MRS. A. J. GORDON

The alcohol-free atmosphere of America is a result of the instruction in the public schools concerning the influence of alcohol. The Americans by this instruction concerning alcohol have done their country greater service than they think.—JUSTUS GAULE, M. D., Professor of Physiology, University of Zurich, Switzerland.

THE marvelous success which has attended the introduction of Scientific Temperance Instruction in the United States has been such an object lesson to the friends of humanity in other lands that nearly every civilized nation now has this instruction in some form in its schools. Naturally, they have turned to America for suggestions as to methods of teaching and courses of study which should insure the best practical results.

A deserved tribute to the excellence of the *International Course of Study* was given by the "Committee of the Medical Profession in the United Kingdom, Constituted to promote the Teaching of Hygiene and Temperance." This Committee of thirty-one distinguished English physicians, representing over 15,000 others, including practically the entire medical profession of Great Britain and Ireland, sent to every local school board in England, Scotland, Ireland and Wales a circular entitled "Suggested Courses of Teaching in Hygiene and Temperance," recommending its adoption; and "honor to whom honor is due," the title page contains the statement that it is "Based upon the scheme prepared by Mrs. Mary H. Hunt for use in the Schools of the United States of America."

This course of study has already been adopted by the Board of Education of Edinburgh, Scotland. It has also been published in two educational papers in Germany, and books in accord with it, adapted to the German schools, are in process of preparation.

The object sought by this study is to teach the physiological reasons for obeying the laws of health, including abstinence from alcoholic drinks and other narcotics, to each generation of pupils passing through our public schools. It is therefore vitally important to have a progressive course of study, including all grades, showing what facts should be presented each year, upon which the teachers can base their instruction. Such a course is valuable also to authors and publishers of school physiologies, as it gives them a working plan adapted to the demands of the different grades.

The *International Course of Study* is so arranged that there are simple oral lessons on hy-

giene and the external parts of the body in the three primary years; the principal organs of the body and their care in the fourth year; and a larger development of these facts in the succeeding years. One-fourth or one-fifth of the space is to be given to specific temperance teaching in connection with each topic. The indorsed text-books are arranged according to this plan, and include an oral lesson book containing model lessons for primary teachers, an elementary primer to be used by pupils of the fourth year, and progressively advanced books for the higher grades. Thus repetition in teaching is avoided, except what is necessary for review; and the subject can be properly covered in thirty or forty lessons each year in each grade.

The Scientific Temperance Department of the Woman's Christian Temperance Union, through its Bureau of Scientific Temperance Investigation, has during all these years kept up the exhaustive research that has furnished the necessary material for books and courses of study.

The *International Course of Study* is the embodiment of all these features, the outcome of twenty years of study as to what shall be taught on this subject, who shall be taught, and how this teaching shall be made most effective. It corrects every fallacy, directly or indirectly, that has prevailed in one part of the country or another as to the supposed value of alcoholic drinks, and suggests the scientific remedy.

The Manchester, England, *Guardian*, commenting on this Course sent out by the English committee and which is an almost verbatim copy of the *International Course*, says, "The specimen syllabus is based on a scheme drawn up for use in the United States schools, and is full of sound learning and splendid common sense. When one sees the proposed teaching set out under the several heads and graduated according to the age of the pupils, the knowledge seems to be so absolutely indispensable that one wonders how it has escaped being taught so long."

This *International Course of Study* has already been made the basis of the Scientific Temperance instruction in many of the most progressive schools of this country. The majority of eminent physicians in Great Britain have given effective testimony to its value and adaptability by recommending it to all local school boards.

Is it not the duty and privilege of temperance workers in our own ranks to co-operate in the endeavor to secure its adoption in all our schools, so that with the proper text-books the results we so ardently desire may be attained? We believe that it is.



THE BRAIN AND NERVES

NOT infrequently the sixth grade of a grammar school is the most wide awake class in the building. The children are of just the right age to feel their strength, and under the direction of the right teacher these independent, ambitious little folks manage to extract more pure delight from hard work than do either older or younger pupils.

If the teaching from the lower grades up has been systematic, as outlined in the *International Course of Study*, the pupils have been given progressive lessons on the brain and nerves since the third school year and should be ready now for more detailed study of the composition and functions of the nervous system, the training it needs to fit it for ever better work, and the injury wrought by even small indulgences in alcohol and tobacco.

Many boys leave school after completing the sixth grade; for this reason the teacher should make the most of her opportunity. That as a rule she is doing so is evidenced by the fact that all over the country public school children, on being questioned, show increasingly intelligent appreciation of the laws of health, including those which point unerringly to total abstinence.

Awaken interest in the present topic by asking the pupils the day before the lesson to write on paper five reasons why a business man needs a clear brain. This may be made an exercise in language. Insist on neatness and accuracy. Let each pupil read aloud what he has written. A number of the best reasons given may be written on the blackboard and left standing until time for the lesson.

THE BRAIN

When the time for the lesson arrives, write the word, Chicago, on the board and draw diverging lines to represent the railways which run north, south, east, and west from that city.

Let the children do the same on paper at their desks.

What is meant by a railroad center?

Where do the orders come from that direct the hundreds of trains passing daily over all these roads?

Do all the train orders come from one office in Chicago? Why not? How are they issued?

How do the orders from the central office reach the different stations all along the railroads?

Erase Chicago and write Brain instead.

Where do the orders come from that enable us to walk, run, play, or do whatever we wish?

How do orders from the brain reach different parts of the body?

If necessary, explain that the brain is divided into departments, and that each issues certain orders to the different parts of the body.

Erase the word, brain, and make a blackboard sketch of the cerebrum and cerebellum.

Mark these as the department of thought, and the department of motion, letting the children do the same on their papers.

In which part of the brain is the department of thought?

In which part is the department of motion?

Refer the class to their books in answer to these questions. Then ask them to write the name, cerebrum, across "department of thought," and the name, cerebellum, across "department of motion" in their drawings, using colored pencils. Write the same in the sketch on the board.

Refer the class again to their books in answer to the following questions:

When is the cerebrum on duty? During what hours of the day does it do its hardest work?

When does it rest? How can we train it to do better work? Why is it important that the cerebrum be always in good working order?

When is the cerebellum at work? When does it rest? Why is it important that the cerebellum never make a mistake in directing the muscles?

What would be the result in a game of ball if wrong orders were sent to the muscles?

Why is the brain so carefully protected? Describe its coverings.

Has it any covering inside the skull? Read what the physiology says on this point.

MOTOR AND SENSORY NERVES

Why do we have double car tracks in our streets? Think of something in the body that corresponds to the car tracks of a steam or electric road.

Find the name of the track over which messages go from the brain to different parts of the body.

Name some of the messages that go from the brain to the muscles of your arm; to the muscles of your leg.

What does the word, motor, mean? Find it in your dictionary.

Why is motor a good word to use when we mean nerves of motion?

Find the name of the track over which messages go from different parts of the body to the brain.

Name some of the messages that go from your fingers to the brain; from your eyes to the brain; from your ears to the brain.

What does the word sensory mean? Find it in your dictionary.

Why is sensory a good word to use when we mean nerves of sense?

Lulu, pick up your pencil from the floor.

How could Lulu tell where her pencil lay?

What messages passed from her eyes to her brain?

What other message was sent before she could move her arm muscles to pick up the pencil?

Suppose you took hold of something hot enough to burn you. What messages would have to be sent to your brain and back again before you could drop it? What if these messages went too slowly?

Why is it very important to keep the nerves in good condition? Do the nerves ever get quite strong again after being injured? Refer to the physiologies on this point.

THE SPINAL CORD

You may all stand.

Bend forward as far as you can.

Straighten up, then bend backward slowly.

What do these movements tell you about your backbone?

Can you bend your arms or legs except at the joints? How many joints in the backbone?

Here is the backbone of a fish. It will bend back and forth like our backbones.

George, take it and see if you can tell why.

It is made up of small bones joined together by a substance that will stretch a little. What is the name of this substance?

There is something else to notice, the hole through each of these small bones.

When these holes are placed one over another, what is formed? What is enclosed in this tube? What is the name of this nerve? Tell what it looks like.

Where shall I place it in our blackboard drawing? Place it in your drawings.



"O, but she has winning ways,
May she keep them all her days."

Here is a skein of fine silk about as thick as the spinal cord in a person.

I will fasten it to this piece of cardboard, and with the pins we will divide off small bundles of strands up and down the skein on each side. Jennie and Ella may help.

Open your physiologies to page — and find how many pairs of spinal nerves there are in the body. Find what these nerves do.

We will take these thirty-one bundles of strands and spread them out with the pins until they fairly cover the cardboard.

This will help to show us how the nerve strands are spread out all over our bodies.

NERVE CENTRES

How many times do you think you have to breathe during the day? Do you have to remember to breathe? What would happen if you stopped breathing? What about going to sleep if we had to remember to breathe all through the night?

Do we have to think in order to keep our hearts

beating? Why not? What would happen if our hearts should stop beating?

Do we have to think about digesting our food?

How does the brain manage to direct our breathing, heart beats, and digestion without our knowing anything about it?

Does the man who owns a large store try to sell all the goods himself? Whom does he have to help him?

The clerks are his assistants.

The brain has a number of assistants. They are called nerve-centers. They control our breathing, the beating of our hearts, and the digestion of our food.

How do these helpers give the brain more time to attend to other things?

Show the class where to find from their books the location of some of the most important nerve centers.

Here are some large flat beads called nail-heads. Where shall we fasten these with pins to our strands of silk to represent these nerve centers?

What would happen if these nerve centers were injured in any way? Why should we be especially careful never to hit or strike the back?

EFFECT OF ALCOHOL ON BRAIN AND NERVES

Why do we keep the ventilators open all the time and the windows too whenever we can?

Why do our heads feel clearer, and why do we find it easier to study when we breathe pure air?

What is the part of the air that our bodies need? What is oxygen? Look in your books and see.

How does the oxygen we breathe reach the brain? How does it get into the blood?

What else does the blood carry to the brain besides oxygen? What kind of food should we give the brain if we want it to do good work for us?

What kind of material will the blood have to carry to the brain if we drink any liquor that has alcohol in it?

How do we know that alcohol never does the brain any good? How do we know that it injures the brain?

Tell some of the ways in which a little alcohol may hurt the brain; some of the ways in which a good deal of alcohol hurts the brain.

Have all the paragraphs in the class text-book bearing on these points read aloud and talked over, till the pupils clearly understand the meaning of each and realize the seriousness of injuring the brain in this way, or in any other.

Additional facts may be gathered from the quotations at the close of this lesson, simplified by the teacher to the comprehension of the class, and perhaps written on the board. Among such statements may be the following:

Alcohol may so injure the brain that it can never recover.

Alcohol may keep us from doing good work with the brain.

Alcohol may make us think slowly.

A person who has taken alcohol is likely to make mistakes in his work.

A person who has taken alcohol can not work so well or so quickly as if he had not taken it.

Alcohol can turn a good man into a bad one. It can make him lazy and ugly.

A person who draws or does any kind of fine work with his hands needs steady fingers. What kind of nerves does the man who takes alcohol often have? the boy who smokes cigarettes? Find the reason.

Can a boy who smokes cigarettes expect to keep up in school with boys and girls who never touch tobacco? Why not?

Why do business men not want cigarette smokers in their offices? Where is the cigarette smoker wanted?

What will *you* do about alcohol and tobacco?

AUTHORITATIVE QUOTATIONS

ALCOHOL ESPECIALLY INJURIOUS TO NERVE TISSUE

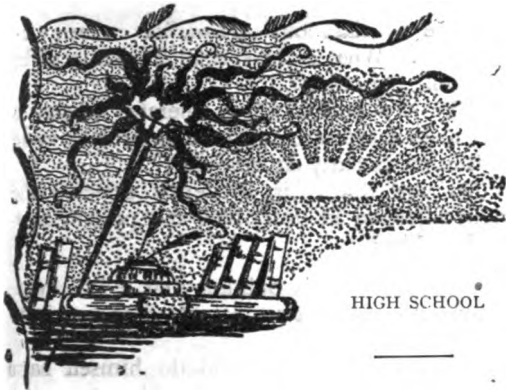
All indications point to the conclusion that it is the nervous tissue which is especially exposed to the cumulative action of the alcoholic poison. The alcohol sets up a chemical action in the nervous tissue, which at first inaugurates only imperceptible changes; but once inaugurated the process goes on until the tissue passes into a permanently diseased condition.—A. STRUMFELL, M. D., Berlin.

EFFECT OF ALCOHOL ON MENTAL FACULTIES

The mental faculties exhibit different modes of expressing the changes effected in them by alcohol. Certain faculties appear paralyzed, while others are very active. The judgment, the faculty by which we compare facts and ideas, and decide as to their truth, may be rendered inactive while the imaginative faculty may be made vivid and sprightly but capricious.—ANDREW BAXTER, M. D. in *Scottish League Journal*.

ALCOHOL LESSENS MENTAL ABILITY

Tests performed by Kraepelin and his students all show a lessening capacity for mental work and a smaller ability to keep the attention directed to one subject. Arithmetical calculations of all kinds were carried out much more slowly and with more errors, and the writing was slower and gave the impression of being that of an uneducated person who seldom had occasion to use his pen.—A. R. CUSHNY M. D., Professor of Materia Medica and Therapeutics, University of Michigan.



ALCOHOLIC FERMENTATION

ADULTS are usually prompted by intelligence in following out any course of action, and boys and girls are not unlike them in this respect.

Teach a boy the truth in regard to alcohol,—what it is, why it is harmful, and how it affects body, mind, and character,—and he will be slow to cripple his future business ability by even moderate indulgence in drinks containing this poison. But the knowledge must come to him through his own observation and reasoning power.

Do not expect to convince high school pupils by mere dogmatic assertion of your own belief. They may listen respectfully, but they will do as they please afterwards.

The claim sometimes made that scientific investigation on the part of young students uses up time that properly belongs to book study is untenable. Original work will arouse a class as nothing else will, and mental activity tends directly to mental strength.

It is sometimes well to write upon the blackboard, a day or two before the lesson, a suggestive question and direct the pupils as to the best sources of information on the subject. For the lesson on Alcoholic Fermentation give this question:

How does alcohol get into wine, cider, or beer?

It is a good plan also to give at the end of the lesson a short quotation from some eminent authority to be memorized.

Write the quotation in a conspicuous place on the blackboard, and tell the pupils to copy it in their notebooks. Suitable quotations appear in each number of the JOURNAL, and the following, from Professor Gruber, of Munich, is particularly applicable to this lesson:

"Whether or not one is susceptible to alcohol can not be foretold. He finds out only by playing a game of chance with his own life, which is a dangerous experiment."

THE YEAST PLANT

Wash the skins and stems of a bunch of grapes in a glass of distilled water. Place a drop of this water under the microscope and let the pupils observe the cells shown.

Where did the tiny one-celled plants come from that we find in this glass of water?

There was nothing in the glass but pure water until we washed the bloom of the grapes into it.

Get another glass of distilled water. Place a drop under the microscope. You find no plant cells there.

Wash the skin of an apple in this water, and then place a drop on the slide. What do you find?

If we had other fruits here, and applied the same tests to each, we should get similar results.

These cells are yeast-plants. They are found in a dry or dormant condition on most fruit skins.

Ask the class to find from their reference books where these yeast-plants come from, and how long they can exist in a dormant state.

A day or two before giving this lesson, crush ripe grapes into a glass and let the juice stand where it will be warm. A sunny window is a good place.

At this point in the lesson take a drop of this fermenting liquid and place it under the microscope. Let the pupils view it and watch it at intervals during the day to note the multiplication by budding of the plants that were washed from the outside of the grapes into the juice when the grapes were crushed.

The yeast-plants have found a food on which they live and thrive. What is it?

Be prepared to direct the class to reference books which will answer this question.

Do these plants feed on sugar as sugar, or do they decompose it and take one or more of its elements leaving others behind?

What elements unite to form sugar?

The yeast-plants, or ferments as they are often called, take oxygen from the sugar and leave carbon dioxide and alcohol.

What makes the bubbles on top of the fermenting juice?

What makes the bubbles when you exhale through a tube into a glass of water?

What is the office of the fruit-skin? Is there any way for the yeast-plants to get into the juice of fruit while the skin remains unbroken?

Could you puncture the fruit-skin with the finest needle imaginable without carrying into the juice on the point of the needle some of these plant-cells already on the outside of the skin?

How does the point of the needle compare in size with the ferments?

While the fruit-skins remain unbroken there is no possible way for the ferments to enter the juice. Consequently, no alcohol is ever present in whole fruit.

Suppose, in eating fresh fruit which has been carefully washed (as all fruit should be before putting it in the mouth), some of the yeast-plants still adhere to the skin and we swallow them. Would alcoholic fermentation take place in our stomachs? Why not?

Refer the class to the chapter on Digestion in their text-books in answer to this question, and make sure that they understand that the digestive fluids in the stomach would destroy the plants and so prevent their growth and the consequent formation of alcohol. Authorities everywhere agree that fresh fruit is very beneficial to us.

WINE

Have in the classroom at least one reference book that will answer the following questions. Some of the regular text-books for this grade will contain the answers.

What percentage of fermented grape juice is pure alcohol?

If the grapes are exceptionally sweet, would the percentage of alcohol be larger or smaller? Why?

How are we to account for the fact that wine often contains a much larger percentage of alcohol than could have been formed in it by the yeast-plants?

Take up the subject of distillation at this point, referring the class to their books to find what distillation is, how it is carried on, and the result.

Adulterations of wines may be considered in this connection. Let the class find all they can on this topic. Bring out the fact that more wines are exported from many grape-raising sections than could possibly have been made from fruit, and that many cheap wines contain no grape-juice whatever.

Physicians' statements may be easily found to show, however, that the alcohol in wine or any other liquor is the dangerous ingredient, and far more harmful than any adulteration. This is the special point to emphasize in this connection.

Sir Frederick Treves, Surgeon to the King and one of the most famous physicians in England says that

"Alcohol is an insidious poison, in that it produces effects which seem to have only one antidote—alcohol again."

Have the class look up *insidious* in their dictionaries. What is the special danger in slight alcoholic poisoning?

Why is a poison which operates in such a way as to create a craving for more of the same poison particularly dangerous?

Do you think Sir Frederick selected the right adjective in describing the poison, alcohol? Why?

A boy gave as his opinion that a little wine taken with cake did no harm. Was he right? Why not?

He argued that one could do himself harm by eating too much cake or drinking too much wine, but that a moderate use of either would not be injurious.

Where was the flaw in his reasoning? Does eating too much cake cause one to crave more cake in increasing quantities? What is true of wine in many instances?

For what has Italy always been famous?

The whole country is one great vineyard. Travelers tell us that the soil today is as productive as it was two thousand years ago in the days of the old Romans.

Why are the Italian peasants so poverty-stricken? They are often industrious, but their energy is expended in grape-raising and wine-making. They have no money, because in that country wine is as cheap or sometimes even cheaper than water. They all drink wine. They think they could not get along without it, therefore they make no attempt to do much with any other crop.

What is the relation of their wine-drinking to their poverty?

Suppose they ate the grapes fresh or as raisins, and made no wine. What would be the result? Scientists have declared that grapes are perfect as a food.

Is it easy for people who as a race have been drinking wine for two thousand years to give up the practice? What is meant by the law of heredity?

Have you ever heard of young men who find it very difficult to resist the craving for alcohol on account of their parents having been drunkards? Such cases are not unknown.

Every one must think of the children he may have as well as of himself. and do nothing to make life hard for them.

CIDER

Wine can be manufactured from any fruit-juice. What is apple-wine?

Is there alcohol in cider?

What did we discover when we looked through the microscope at a drop of water from the glass in which we washed the apple?

Refer the class to their books to find the percentage of alcohol in cider.

People who drink cider thinking it harmless would be surprised to find that it sometimes contains ten per cent of alcohol.

Have the class find the special ways in which cider-drinking is known to injure the drinker.

Bring out the special danger in drinking sweet cider,—that no one can tell the precise moment in which it ceases to be sweet and begins to contain alcohol, and that every immoderate drinker of cider or wine or beer was once a moderate drinker and had no thought of ever being anything else.

What is the only safe course to follow?

BEER

From what is beer made?

What element forms a large part of all grains?

Could yeast-plants feed on starch? Why not?

What change takes place in the composition of sprouting grains?

When sugar has been formed, why do brewers kill the sprouting grain by heating it?

Why do they put in yeast?

What makes the froth which is always seen on beer?

What is the usual percentage of alcohol formed by the yeast in beer-making?

Refer the class to their books on these points as before.

A young man once made this statement: "There is no harm in a glass of beer." Was he right or wrong? Why?

What are the conditions under which alcoholic fermentation takes place?

How does fermentation always affect the nature of the substance it acts upon? If given time and kept where the liquid is warm, what is the certain result when yeast is added to sweetened water, whether flavored with roots or bark or anything else?

How many have noticed fermentation taking place in root beer, ginger beer, or other home-

made beers made with yeast? Is it safe to make any terms whatever with alcohol? Why not?

Some people advance this argument: "Children must not drink beer, but it does not harm grown people." Are they right or wrong? Why?

Yeast may serve a useful purpose; what is it?

Describe the process of bread-making with yeast. What makes the holes in a loaf of bread?

Does bread-flour contain any sugar?

What is meant by bread "rising"?

What becomes of the small quantity of alcohol which is formed?

Why is there no alcohol in well baked bread?

In summing up the points thus far brought out on the subject of alcoholic fermentation, lay special stress on the following:

Fermentation entirely changes the nature of the substance in which it occurs.

All drinks produced by fermentation contain alcohol.

Alcohol is a narcotic poison having the power when taken even

in small quantities of creating a craving for itself which may become uncontrollable.

No one can tell beforehand whether or not he possesses the power to "control" himself and continue to drink only moderately, or whether, if he possesses this power himself, his descendants will possess it.

The only safe rule for any one to follow with drinks containing any alcohol is to let them entirely alone.

AUTHORITATIVE QUOTATIONS

ALCOHOL A POISON

Medical writers speak of alcohol as a poison and refer to it as a poison without apology or modification. Thus Professor Herter says, "Still a third class of poisons is to be considered. These are poisonous substances introduced from without, for the most part by way of the mouth. An example of such a poison is alcohol."



"The sunshine drops like a leaf of gold,
From the book of light above."

ALCOHOL A PRODUCT OF FERMENTATION

Spirits of wine, or ethyl alcohol, or simply alcohol, is the result of the fermentation of grape sugar which takes place in the presence of the yeast fungus.—PROFESSOR BINZ, Univ. of Bonn.

WINE TOTALLY DIFFERENT FROM GRAPE JUICE

Between the sweet juice of the grape which does not intoxicate and the intoxicating wine which the drinker loves, a foreign element has entered—fermentation; that is the life of a little fungus, yeast, which feeds upon the juice of the grape and rejects the wine.

That which we drink as wine has no more to do with grape-juice than for instance the arrow-root of the plant has with the carbonic acid of the air on which it lives. The one as well as the other is the product of a chemical change which is brought about by the life process of an organism, though to be sure in quite the opposite sense, for the plant cell glorifies, in that it forms from a dead substance, as we may call it, a great source of power; while the yeast cell does exactly the opposite.—J. GAULE, M. D., Professor of Physiology, University of Zurich.

CIDER DRINKING AND INSANITY

In the report of the Burghill Asylum, England, the medical superintendent states that more people were in the asylum through cider-drinking than through any other cause.—*British Medical Journal*.

While a man who goes on an occasional debauch bequeaths weakness and disease to his children, the man who tipples but never gets drunk is even more likely to leave the same heritage and tendency to disease, perverted appetite and a weak will.—SIR B. W. RICHARDSON, M. D., F. R. S.

A SONG FOR AUTUMN

BY HELEN GRAY CONE

Sing good-bye to all the flowers for the happy
summer hours,
When the leaves are brown and red upon the
tree;
'Tis the autumn song of sorrow, for the win-
ter's here tomorrow,
And the swallow's left the lea.

For the dew is on the meadow, and the morn-
ing's gray, sing hey!
And it's hey for a windy October day!

And the poplar boughs drop gold, as a story
slowly told,
And the maple rustles crimson in the sun;
And the silver willows shiver in the breeze that's
on the river,
And the happy summer's done!

For the rain has swept the meadow, and the
morning's gray, sing hey!
And it's hey for a windy October day!

St. Nicholas.

CIGARETTE SMOKING

Cigarette smoking begins with an effort to be smart.

It soon becomes a pleasure—a satisfaction, and serves to bridge over a moment of nervousness or embarrassment.

Next, it becomes a necessity of life, a fixed habit.

This last stage soon evolves into a third condition, a stage of fever and unrest—wandering of mind, accompanied by a loss of moral and mental control. And finally a flabbiness of tissue results through taking smoke into the bronchial tubes, where pure air is required to oxygenize the blood, and a nervous weakness follows that leaves the victim unprotected, and a prey to any sort of malady or disorder to which he may be exposed or liable.

The cigarettist dreams over his work, dawdles indefinitely, picks things up and lays them down, and proves for us again and again the maxim that the strong man is the one who can complete a task, not merely begin it.

One marked peculiarity of the cigarette fiend is that invariably he makes a great discovery; it is that cleverness, astuteness, trickery, untruth, are good substitutes for simplicity, frankness and plain common honesty.

Dishonor, perfidy, disappointment, disgrace, are the end of all.—*The Philistine*.

PHYSIOLOGY TOPICS FOR OCTOBER

PRIMARY—Correct Position in Sitting, Standing, Walking. Sense of Feeling; Location, Training. Teeth; Shape, Use, Care.

INTERMEDIATE—Care of Living and Sleeping Rooms. Cleanliness. Fresh Air. Brain, Spinal Column, Nerves; how affected by Alcohol and Tobacco. Smell, Taste, Touch; how rendered acute. Alcoholic Appetite.

ADVANCED—Digestion and Assimilation. Respiration; Breathing Organs. Voice; how produced, how trained. Fermentation. Alcoholic Liquors; Effect on Mind, Body, Character.

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THE SCHOOL PHYSIOLOGY JOURNAL



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 MARY H. HUNT, EDITOR

VOL. XV. NO. 3
NOVEMBER, 1905

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School Physiology Journal

Vol. XV

BOSTON, NOVEMBER, 1905

No. 3

IF I WAIT

BY HELEN M. RICHARDSON

I do not hear the message that
The Robin hears in spring,
Which brings him homeward from afar
On swiftly flying wing;
But still I know he's coming, and
Will find his nest and mate,
In the tree which now is leafless—
So I wait.

I can not feel the shiver that
The startled leaflet feels
As autumn's breath, frost-laden, through
Its vivid greenness steals;
And yet the change is coming, though
To me it may seem late;
And the green leaves will turn crimson
While I wait.

I can not grasp the meaning of
Earth's happiness and pain;
Yet both I know await me if
Life's best I would attain;
Each step, I trust, leads onward, and
God's universe is great;
So I'll find no incompleteness
If I wait.

The Ladies' Field.

SCIENTIFIC TEMPERANCE IN THE PULPIT

BY CHARLES SCANLON

Field Secretary of the Temperance Work of the General Assembly of the Presbyterian Churches of the United States.

THE Presbyterian church salutes the Woman's Christian Temperance Union and gratefully acknowledges its appreciation of the value and the valor of the White Ribbon Army.

With the fervor of woman's devotion you have carried the white flag of purity around the world and erased the stain of a double standard from many a conscience. Up steep and rugged ways which could be tracked only by the feet of fearless faith you have triumphantly borne the banner of righteousness and placed it high upon the rampart of truth. With dauntless courage and matchless enthusiasm you have assailed in unequal combat evils which stretch away in Alpine ranges to the ends of the earth and almost to the beginning of mankind.

But of all your labors none has been more conspicuously successful, none more fruitful of

good, none farther reaching in influence, none which promises to be more enduring than your achievements in Scientific Temperance Instruction. By common consent you have made the whole world your debtor in this field of investigation.

If a minister wishes to take the triteness out of his temperance sermon and bring to his people a fresh, instructive, and inspiring message on this theme let him approach the subject from the scientific standpoint. There are of course other phases of it to be considered, but the scientific view point is comparatively a new one and will be found fruitful and helpful.

Speaking as their representative, I wish that all Presbyterian ministers would draw freely and frequently from the rich fund of scientific temperance information supplied by our distinguished countrywoman, Mrs. Mary H. Hunt of Boston, Mass., whose premiership in this field is recognized the world over.

The time is past, if it ever existed, when an educated man can innocently give himself to the infinitesimal minutiae of sacerdotal microlgy or the extenuated exegesis of a casuistry, often as preposterous as it is puerile, while questions of practical and eternal moral significance await solution; while evils as gross as they are prevalent frown and glare upon him.

To preach art, history, literature, invention, travel, science, and what not, except to impart truth, and then, under cover of reverence for the gospel, to avoid only those things which, because they are right, may embarrass some individual or some organization, is to play both the coward and the hypocrite.

Morality without religion never has and never can satisfy the human soul; and religion without morality is transparent hypocrisy.

It often takes more courage to face the scorn and ridicule of opinionated conservatism than to lead men into battle. But not what is policy, not what is popular, not what other men think or say or do, but what is right, what is true, what is good, is the only worthy criterion for any man, whether it be in business, politics or religion.

This is the quality in the conquerors of old which has enshrined their names in deathless glory; it was this spirit in our forefathers which laid strong and deep the foundations of civil liberty and religious freedom. Dare we blaspheme God by asking if it is wise to do right? What merit is there in praising the valor of the fathers unless we are willing to emulate their

virtues? Compromise never permanently settled a moral question.

The Presbyterian Church does stand openly and frankly for total abstinence for the individual, for the study by all pupils in all public schools of physiology and hygiene which includes the nature and effects of alcoholic drinks and other narcotics, and for the legal suppression of the liquor traffic by the state and the nation. This the logical goal of all temperance work and to aim at anything nearer or easier is to ignore history and invite defeat. We bid godspeed to every instrumentality which seeks in a worthy way to further these ends.

Here we stand. We will not evade nor ignore nor excuse nor apologize nor condone; we will smite to kill.

It is no braggart bravado which is here suggested, no needlessly offensive personalities, no pharisaical denunciation, but a firm, kind, bold, aggressive warfare against every agency and every practice which aids or abets, sanctions or countenances this iniquitous traffic in human souls.

Our weapons are handed down from the skies, but are fashioned and tempered according to our own zeal and wisdom. The balance of battle is in God's almighty hand and there can be no question as to the final issue of the conflict.

INDIAN SUMMER

BY J. G. WHITTIER

TALK not of sad November, when a day
Of warm, glad sunshine fills the sky of
noon,
And a wind, borrowed from some morn
of June,
Stirs the brown grasses and the leafless spray.
On the unfrosted pool the pillared pines
Lay these long shafts of shadow; the small
rill,
Singing a pleasant song of summer still,
A line of silver down the hill-slope shines.
Softly the dark green hemlocks whisper; high
Above the spires of yellowing larches show
Where the wood-pecker and home-loving
crow
And jay and nuthatch winter's threat defy.
O gracious beauty, ever new and old!
O sighs and sounds of nature, doubly dear
When the low sunshine warns the closing
year
Of snow-blown fields and waves of Arctic cold!
Close to my heart I fold each lovely thing
The sweet day yields, and, not disconsolate,
With the calm patience of the woods I wait
For leaf and blossom when God gives us spring!

SCIENTIFIC TEMPERANCE IN THE PUBLIC SCHOOLS

BY ALFRED L. MANIERRE*

THE liquor business is an intolerable nuisance.

No scientific demonstration as to the nature of alcohol and its effects on the human system ought to be necessary to spur men on to end a business so manifestly a public enemy.

Rationally the saloon should have had its quietus long ago, but human nature finds it easy to "take things as they are" and leave them without improvement.

If "wine is one of God's good gifts to men," if all the evils of drink are due to the "abuse" of a thing good in its "use," or if a considerable part of the community believe these things to be so, then, in spite of the manifest horrors of the liquor business, its destruction is likely to be long delayed.

The man whose general attitude of mind is fairly expressed by the familiar phrase "there's no harm in a glass of beer" can not be counted on to bestir himself to help wipe out the saloons.

Not long ago a Sunday School suburban to New York City had its first opportunity at pledge-signing. Omitting the infant class, about 125 scholars were present. Over 100 of them signed the pledge. While the signers crowded around the desk, there entered one of the deacons who was also a trustee of the district school. The proceedings were explained to him by one who expressed surprise at the ready response of so large a number.

"Oh, it's not surprising," said the deacon: "you know they are obliged to learn all about alcohol in school. My Willie knows more about it than most grown people. Nothing would induce him to drink anything with alcohol in it."

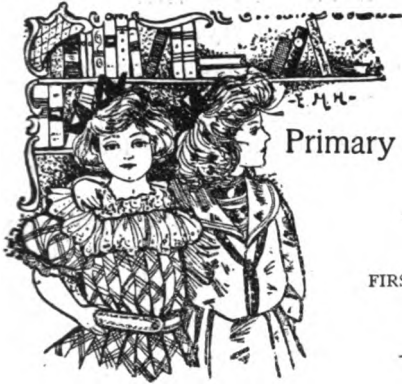
Willie's father (the deacon and school trustee) had no special interest in temperance. He grew up believing "there's no harm in a glass of beer," but Willie knows better.

There are about twenty-two million "Willies" and "Marys" coming up in this country under scientific temperance instruction laws and some day they will hold a jubilee at the obsequies of the liquor business, done to death by their sovereign will.

What happened in the Sunday School at S— is fact, not fancy. It can be repeated in any locality where the temperance instruction laws are fairly well enforced.

• If temperance sentiment is dormant in a town, it is *prima facie* evidence that scientific temperance is being neglected in the schools. Such a community is worthy of double condemnation, for it is faithless not only to its own children but to the welfare of the entire commonwealth.

*The author of this article is a brilliant young lawyer of New York City.



Primary Lessons

FIRST YEAR] =

FRUIT AND ITS USES

ASK the children to bring to school different kinds of fruit. Not only will this provide a variety of samples, but it will arouse the interest of the children in the subject. Perhaps it may also awaken the curiosity of the family, as a part of the lesson will undoubtedly be repeated at home by the child.

If colored crayon or colored chalk can be procured, the children will like to cut out the shapes of the fruit from paper and color them realistically.

Where it is possible to obtain clay, this is an excellent opportunity to give a lesson in modeling. The different fruits are fine models.

If number work has been begun, the teacher can arrange lessons, using the specimens of fruit.

KINDS OF FRUIT

Let us name as many kinds of fruit as we can think of. Apples, pears, peaches, oranges, plums, grapes, lemons, berries, bananas, nuts, etc.

Illustrate each by showing the fruits or pictures of each.

Which of these fruits have you seen growing?

What do we see on the apple tree in the spring?

After the white and pink blossoms are gone, what is left on the tree in their place?

When are the apples ripe? Tell about the colors of the different kinds of apples.

How does the pear grow? When is the pear ripe? Are pears and apples the same shape? Illustrate.

How do grapes grow? On a vine.

Do grapes grow separately like apples and pears? They grow in bunches. In California they raise a great many grapes. The place where grapes grow is called a vineyard.

Bananas grow in great bunches on tall trees. They grow in a land that is very hot, and are brought to us in ships from over the sea.

FRUIT GOOD TO EAT

What are all these kinds of fruit good for? Food.

When is fruit not good to eat?

Unripe fruit is apt to make us sick.

How can we tell if apples and pears are ripe? They will have brown seeds, and usually they will be somewhat soft.

If a ripe pear or apple stays too long in a warm place, what happens to it? Overripe or rotten fruit is not fit to eat. If we eat it, what is it likely to do to us?

CIDER

Sound, ripe fruit is good food, but men often crush out the juice and make from it a drink that is not at all good.

One afternoon Alice and Frank were in the orchard watching the men pick the apples.

The men divided the fruit into two piles. All the sound good fruit they put into barrels to send to market.

The apples that were small and wormy they threw in a heap on the ground.

"What are you going to do with those mean little apples?" asked Alice.

"We shall make cider of those. Here is the cider press. Come and see it."

The children went over. They found a man shoveling the apples into a great vat, where they were crushed until the juice ran out.

At first, this was clear just as it was in the apple, but there was some near by which had been standing for awhile, and it was darker in color.

"What do you use the cider for?" asked Frank.

"We let it stand in great barrels, or hogsheads, for many months.

"At first it is sweet, just apple juice, but mixed with the juice is dust from the skins.

"This dust contains some tiny plants—so tiny you could not possibly see them. After the sweet juice has stood awhile, these plants begin to grow and use the sweet part for food. As they use this up they leave in its place a poison called alcohol.

"Some people like to drink this juice that has alcohol in it.

"They call it hard cider. They do not think of the poison in it.

"If we let it stand longer another little plant begins to grow in the juice, using up the alcohol. Then it becomes sour and we have vinegar. There is no alcohol in vinegar."

"Is that what mother uses for pickles?" asked Alice.

"Yes. That is cider vinegar."

"Well," said Frank, "I'll take my apple juice in the apple after this, I think."

"So will I," said Alice."

WHY WE SHOULD NOT DRINK CIDER

Why should we not drink cider?

Because it contains a poison, alcohol.

Many people say that cider does no harm, because there is little alcohol in it. It often contains more than they think. If one gets to like cider it may make him want more and more. By and by he takes something with more alcohol than cider contains.

What, then, must we say when any one offers us cider to drink. "Thank you, I would rather take my apple juice in a big red apple."

SENTENCES.

Apples and pears are fruit.

Grapes grow in bunches.

Overripe or unripe fruit is not good to eat.

Never drink cider. There is alcohol in it.

MY KITTEN

BY EDWARD CARSWELL

O H! I had such a fright
That I trembled with fear,
I thought that my kitten
Had taken to beer.

There's a lager beer garden
Just over the way
And kitten goes over;
I saw her today.

Then I watched her come out
And, mercy! I saw
She was wiping her mouth
With her little white paw.

I caught her up quickly
And said, "Tell me true,
Have you broken your pledge?"
And she answered me "mew."

Well, then, I felt better,
For kittens, you know,
They always say "mew"
When they want to say "no."

But no badge could I find;
Not even a speck
Of the little blue ribbon
She had worn on her neck.

But then, when I carried
Her into the house,
She sprang from my arms
To run after a mouse.

And mamma then told me
To banish my fear
That kittens might steal,
But would never drink beer.

So I'll get a new ribbon;
I am so glad.
That she had not been drinking;
But, oh! if she had!

GRAPES AND WINE

SECOND YEAR

BRING a dish of fruit including grapes into the schoolroom, and lead the children to see how busy the tree, shrub, or vine has been to make these fruits ready for use.

GOOD USES OF GRAPES

After as much general work of this nature as time allows, take up the grapes more in detail. Explain what each part of the grape is for.

Do we have grapes to eat soon after the leaves come out? All these fruits that are so helpful to us need time to grow.

(Trace the growth of a grape seed. Show the hard seed and a cluster of grapes, and speak of the Wonderful Power which has brought the one from the other.)

When we care very much for anything we say it is precious. Do you not think anything as precious as grapes should be put to good use?

What are the good uses of grapes? Nearly every one likes the fresh ripe grapes, and most people like the jelly that is made from them.

A BAD USE OF GRAPES

Sometimes something else is made from grapes which is not good for people. It is a drink called wine. Let me tell you how it is made.

In some parts of the land great fields of grapes are growing. These fields are called vineyards. The vines are trained on a short framework, not much higher than your heads.

When the grapes are ripe, men cut off the bunches and put them into a great trough, called a wine press.

Here the grapes are crushed between wooden rollers to make the juice run out. At first this juice is sweet and good. But after it has stood for awhile tiny plants called ferments begin to grow in it. These plants got into the juice from the skins of the grapes, when they were crushed in the wine press.

They use the sweet part of the juice, the sugar, for food and leave in its place a poison called alcohol.

Grape juice which is fermented, that is which has alcohol in it, we call wine. It is not good for us to drink. It has the power to make people who drink it wish for more and more.

THINGS TO REMEMBER

The juice in ripe fruits is good to eat.
After it has been pressed out and stood awhile it is not good to drink.
There is alcohol in it.
Alcohol is hurtful.
If we never touch it it will never harm us.

GRAIN AND BEER

THIRD YEAR

Material—specimens of different kinds of grain.

WHO can tell me where grain grows?
Tell me as many kinds as you know.
(Write on board.)

GRAINS WE USE

What grains give us bread, cake, johnny cake, oat meal, shredded wheat, rice pudding, macaroni, rye bread, Indian pudding?

How many of you have ever seen a field of grain? Tell about it.

GRAINS FOR COWS AND HORSES

The cows eat grass, but the farmer knows that corn meal is good for them, so he has a great deal of the corn ground which he gives to them when they need it.

When a man wishes his horses to do hard work, what does he give them? (Show oats.)

Many years ago people did not eat oatmeal, but some one must have thought that if it made horses strong, it would be good for people.

There is one grain that is more useful to us than all others. We use it every day. (Show wheat.) We call the breakfast food made from it pettjohn and cracked wheat.

Grape nuts are made of different kinds of grain.

(Speak of the difference between white flour and that made from the whole wheat, and why whole wheat flour is more nourishing.)

GRAINS FOR BIRDS

Have you ever seen birds flying over a grain field? What were they after?

Sometimes they are troublesome to the farmer when they go to his fields in flocks, but the birds know that grain is good for them.

Some grains are planted in the fall, yet the seeds do not freeze but come up in the spring. Others are planted in the spring.

(Show picture of "The Sower" by Millet page 39.)

HOW GRAIN IS RAISED

In the western part of this country there are miles and miles of grain fields. The men use machines to help them, but the men need to be strong in order to do the work.

(Let the children act out the manner in which a field is made ready for sowing, the planting of the seed, etc., or bring out the process by questions.

Show as many kinds of grains as possible and pictures of growing grain and harvesting.

Talk about the harvesting and how the grain is carried over the country.

Show what we owe to those who work early and late that we may be fed. Inspire the children with respect for those who labor.)

If time allow, each child may personate a part of the process, e. g.

"I am a grain of wheat."

"I am the soil in which it is planted."

"I am the plough that makes the soil ready for the wheat."

"I am the man that guides the plough."

"I am the horse that draws the plough."

"I am the harrow that smooths the ground," etc.

(In sections of the country where the work

is done by machinery the statements should be varied to suit the locality.)

"Back of the loaf is the flour,

And back of the flour is the mill,

And back of the mill is the sun and the shower
And the Father's will."

(Teach to the children. Be sure they understand it.)

BEER

We have talked about the good uses of grain. There is one use to which it is put that does not help people, but harms them. There is a grain called barley. (Show specimen.)



"Sing now the song of fruits and flowers,
And all the daughters of the year shall dance."

Here is a story about it.

Once there was a large field of waving barley, many, many grains of nourishing food.

The barley was gathered and made ready to sell, packed in bags and sent to a place called a brewery.

Men emptied the barley into a large cistern or vat and poured on water enough to cover it. They left it until each grain was twice as large as it was before and very soft.

Then they put it in a warm room where it was left to sprout. (Show a kernel of sprouted grain, or a sprouted potato if grain is not available.)

When it had sprouted and a few little rootlets had grown, it was put in a dry, warm place and left there until it was dry and the sprouts were killed.

Next it was ground, and water and yeast were added to it.

Who can tell what yeast does to bread? Yeast does not make beer rise, but it helps change the barley water to beer.

When you chew a grain of barley or wheat it tastes sweet. What do you think gives it the sweet taste?

The water soaked the sugar from the grain, and when the yeast was added a part of the sugar was changed to alcohol.

In this change a part of the good sugar was taken from the grain and something bad called alcohol took its place.

Alcohol looks like water but is very different.

If beer were all alcohol no one would drink it, because it would burn the throat and stomach and soon kill one.

Beer has only a little alcohol in it, but that little is harmful.

The great trouble with drinking beer is that the alcohol in it may make the person who drinks it want more and more.

DOCTORS TELL US BEER IS NOT GOOD FOR US

Doctors have studied about beer for years. They find it is not good for people.

Suppose it was very dry weather and a great deal of dust was blowing through your street. Would you let it come into your home, or would you try to shut it out?

Why do we try to keep out flies, spiders, mosquitos, and all things that would make the house unclean?

If we take pains to keep everything harmful out of the house we live in, how should we treat the house we always carry about with us?

If a man had a machine that he wished to have do good work, would he put anything harmful into it? Why not? He would use only that which would be good for it.

Review the main facts of the process of the making of beer.

You may write in your books these

THINGS TO REMEMBER

We should give the body only healthful drinks.

Beer is not good for us.

There is alcohol in it.

It harms the body in many ways.

ARTHUR'S DREAM

Arthur went to bed early one night and had a strange dream.

He dreamed he saw a row of queer looking little people standing on a shelf. They were about ten inches high. They had small heads, very long necks, long bodies, and no feet. They were talking, and this is what they said.

One that was dressed in yellow, whom the others called Mr. Cider, said, "I wish I was what I used to be."

"What were you?" asked one that was dressed in dark red, whose name was Mr. Grapewine.

"I was once a fruit called apples, and I was beautiful to look at and good to eat.

"One day a great many of us were put into a mill and ground. All the juice was pressed out of us.

"At first the juice was sweet and healthful, but after a few hours a part of the sugar that made the juice sweet changed into something that is called alcohol, which is hurtful.

"The alcohol spoiled me. After that, I noticed that people who drank a great deal of this juice often said silly things or were cross and disagreeable.

"I listened to what the wife of the man who was putting me into the bottle said to him.

"She said, 'I am sorry you are going to put some of this cider away, for the older it is the more harm it does.'

"The man did not mind what she said, but filled bottle after bottle. I am one of those bottles, and ever since I have wished that I could run away and hide."

"I feel just as you do," said Mr. Grape Wine. "I was never an apple. I was something called grapes; a beautiful fruit that most people like to eat, and which I have heard does them good when eaten fresh or cooked.

"The same thing happened to me that you say happened to you, and now I, too, have the power to do harm."

Then some one whose name was Mr. Beer said, "I was never the wholesome fruit of which you speak.

"I was beautiful waving grain. I haven't time to tell you how I was changed to what I am; but I know that now I often make people stupid and cross.

"Some people think because I am made of the same kind of grain that is used for bread, that I am food as well as drink.

"I know I am not, for the poisonous stuff called alcohol is now a part of me and is always ready to do harm.

"Sometimes people drink me because they think I make them feel warm for a short time, because I make the blood flow to the surface of their bodies, but in a little while they feel colder than before they drank me."

Then a brownish yellow person spoke. His name was Mr. Whisky. "What do you think I was once?" said he. "I was tall corn growing in a field. I wanted to be gathered to feed people and cattle, but instead of that I was worked over and over and many things were done to me that I do not understand, and I heard a man say,

"I have to do this work, but I hope no boy or girl of mine will ever make corn into whisky or drink it either."

"I thought I must be very bad if no boy or girl ought to touch me; for I like boys and girls and I knew if I had been allowed to be sweet yellow corn I could have done them good."

"It was too bad," said the others.

Then Arthur woke up, but though he lived to be an old man he never forgot this dream.

You know that the men who train for a boat race need to be very strong. Those who train them do not allow them to eat hurtful food, nor take beer, wine, or any drink that contains alcohol, nor are they allowed to smoke. All these things are harmful and will weaken them. If harmful to grown people they are much more so to children.

Money should be used to buy only good things, things that will make us better or happier. It is foolish to spend money for drinks that harm us.

AUTHORITATIVE QUOTATIONS

WINE PRODUCES DRUNKENNESS

It is clearly ascertained that wine alone, itself, produces drunkenness with all its consequences: diseases, insanity, and crime. The Hebrew story is characteristic, which relates that the man who first planted the vine was also the first drunkard. — G. VON BUNGE, Professor of Physiological Chemistry, University of Basel.

ALCOHOL IN BEER, WINE, AND CIDER A POISON

Alcohol in any form, as brandy, wine, or beer, even in relatively very small amounts, is a poison for the human body. — DR. FRANKEL of Halle.

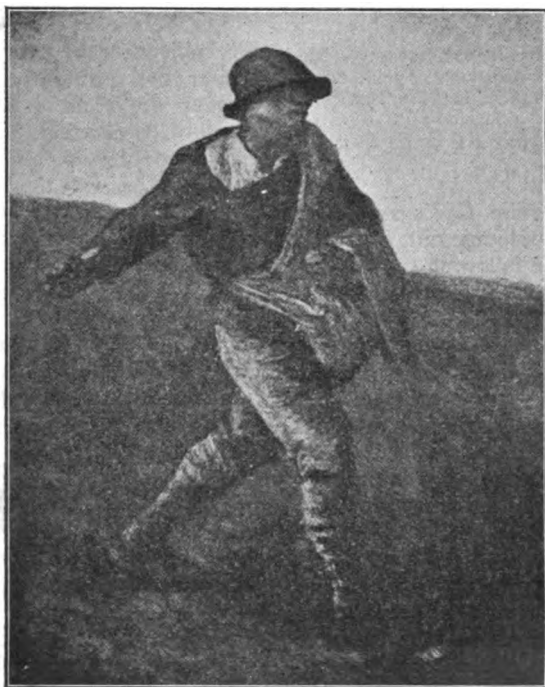
HARM IN BEER-DRINKING

Next to brandy as poison comes beer.

Each limits the capacity and lowers body, mind, and soul. — COUNT VON HÄSELER, formerly Commander Sixteenth Army Corps, Germany.

THE APPETITE FOR ALCOHOL

It is because the appetite for alcohol grows on one that many who begin as moderate drinkers, and intend to remain so, become hopeless drunkards. Any alcoholic drink may cause this unnatural and uncontrollable appetite for alcohol. Since this is true, it is safe to say that the right course is not to begin to drink alcoholic liquors. — ANDREW EADIE, M. D., Professor of Physiology, Ontario Medical College for Women, Toronto.



"A sower went forth to sow;
And one autumn day a golden harvest glowed."

ILLUSTRATIONS

If a sailor should take wine, beer, or whiskey, what would happen when he climbed the mast?

He might fall, because the alcohol in what he drank is likely to make his body unsteady.

A teacher is very cold when driving. He gets a drink of beer and feels warmer for a short time because the alcohol sends the blood quickly through his body. After a while, he feels colder than before he drank the beer. He has lost the heat.

Why can not a drinking man walk straight? (Just here give the hint that if we see a drunken man on the street, we should show him kindness only, or take no notice of him.)

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INDIAN SUMMER

With longing eyes the fading year looks back
To view her youthful way, as one grown old.
June smiles to her across the lengthened track,
And, lo! the world is bright with summer gold.

—CHARLES HANSON TOWNE.

ANSWERING OUR OWN PRAYERS FOR NO-SALOON

IF we are able to recognize God's answer to our prayers for no-saloons our eyes will be opened to see the following facts:

FIVE TELLING FACTS

First, that under our government of the people only the ballots of a majority of the voters can close the American saloon.

Second, that temperance teaching which does not reach the majority will educate a minority, but at the ballot box that minority will be helplessly voted down by the unreached majority.

Third, that if we want the saloon closed we must teach the majority, the law-making power, that alcohol is by nature an outlaw which should be banished from human habits and traffic.

Fourth, that compulsory scientific temperance instruction in the public schools is the one God-given method of temperance teaching that reaches the coming majorities.

Fifth, that if we are engaged in every other good work, but are neglecting scientific temperance instruction in the public schools we are not preventing the continuation of present conditions, namely, a temperance minority helpless before an opposing saloon majority.

FOUR THINGS TO DO

If our eyes are opened to see these facts, what can we do as temperance people?

If we are residents of the United States, we are living under laws that require in all the public schools the study of the nature and effects upon the human system of alcoholic drinks and other narcotics as a part of physiology and hygiene. Therefore,

1. Go to the school board and ask for the adoption of the *International Course of Study* in temperance physiology which provides for thirty or forty progressive lessons per year in this subject, beginning with the primary and ending with the first year of the high school.

2. Ask for the adoption of graded, indorsed text-books in temperance physiology for all the grades,—an oral lesson book for the use of the teacher in giving oral instruction to the primary children in the first three years who are ordinarily unable to read; a simple primer for the use of pupils in the fourth year, supplemented by oral instruction; a more advanced book for fifth and sixth year pupils; a still more advanced book for seventh and eighth year pupils; and a high school book for pupils of that grade.

3. We are praying for renewed interest in this subject on the part of teachers. Why not answer our own prayers by sending to each teacher the *SCHOOL PHYSIOLOGY JOURNAL*, a monthly publication, each number of which gives model lessons on this subject for the different grades, with the latest scientific facts on each topic discussed. God never does for us what we can do for ourselves.

4. Show an interest in this work in the schools by giving receptions to the teachers and by visiting the schools. Invite teachers who are known to be friendly to read papers on this subject at such receptions and at teacher's institutes. Furnish them with the latest information for such papers.

ACTION OF A GREAT CHURCH

The General Assembly of the Presbyterian Church, through its temperance committee, calls upon every pastor to preach or hold a meeting once a year upon this subject. Ask ministers to do the same whatever the denomination. Send them material which contains information as to the extent and progress of temperance education and its results in our own and other lands.

Do all this and pray for God's blessing on this work, and we shall see a steady growth in intelligent total abstinence sentiment in every community. We shall not have to wait till these children are grown up before we get a majority against the saloon. The children in the public schools in any community, tell at home of what they have learned in school. Parents all through our land are thus learning the evil nature of alcoholic drinks.

GOD'S DEFENSE OF THE TRUTH

God has wonderfully blessed our efforts for securing the laws requiring this study. He has helped in the preparation of a large variety of well graded, indorsed text-books on temperance

physiology. He has defended the truths these books teach against every attack. Notably this was done in the case of the work of the Committee of Fifty which was instituted with the expectation that it would prove the indorsed textbooks to be inaccurate, but the costly experiments conducted by that committee through a period of ten years proved by experimental demonstration just the opposite of what the Committee expected, namely, that the teaching of the books in question concerning alcohol is accurate.

England, in seeking to save her own people from alcoholic destruction, is also helping us in this battle for the truth. Within the last few months a committee made up of some of the most distinguished scholars and scientific men in the English-speaking world, representing the entire medical profession of the United Kingdom—15,000 physicians—has recommended our Course of Study or scheme of topics on this subject as truths that must be taught the children to save a nation from degeneracy. They have sent this scheme of topics, which they state is based on that prepared for the schools of the United States, to every school board in England, Scotland, Ireland, and Wales for adoption. This kills forever the charge of inaccuracy against our indorsed teaching.

But all these helps will count for nothing if we do not use them as arguments for the best enforcement of our scientific temperance laws.

REACHING THE MAJORITY

In all ages God has chosen his own instrumentalities. It has pleased Him to lay upon the hearts of American men and women this matter of the temperance education of the children of a coming age. Remembering that God never does our part, we must not, while busy here and there with smaller methods, forget that He will hold us to a stern responsibility for not using instrumentalities which will reach the majority that will ultimately banish every legalized brewery, distillery, and saloon from our land.

FALLING LEAVES

BY LOUISA ADDEY

Tawny, ruby-tinted, golden,
From the young tree and the olden
Leaves drop down in shining showers
On the graves of summer flowers.

Somewhere in the empyrean
Time, methinks, half-smiling stands,
Shaking from his glass uplifted
With his gaunt and trembling hands,
Leaves, we say, of oak and beech tree,
O'er the misty autumn lands,
Through the forest, by the wayside,
They are but his golden sands!

NOVEMBER

BY ALICE CARY

THE leaves are fading and falling,
The winds are rough and wild,
The birds have ceased their calling,
But let me tell you, my child,

Though day by day as it closes,
Doth darker and colder grow,
The roots of the bright red roses
Will keep alive in the snow.

And when the winter is over,
The boughs will get new leaves,
The quail come back to the clover,
And the swallow back to the eaves.

The robin will wear on his bosom,
A vest that is bright and new,
And the loveliest wayside blossoms
Will shine with the sun and dew.

The leaves today are whirling,
The brooks are dry and dumb,
But let me tell you, my darling,
The spring is sure to come.

There must be rough, cold weather,
And wind and rains so wild,
Not all good things together,
Come to us here, my child.

So, when some dear joy loses
Its beauteous summer glow,
Think how the roots of the roses
Are kept alive under the snow.

EVIDENCE FURNISHED

It was ironing day, so Lulu, too, must use her little irons. Mamma noticed that the child was busily engaged with a pin in the operation. She would hold it in her mouth and then fasten it into the article she was ironing. "What are you doing with the pin, Lulu?" asked her mamma.

"Why, I have to put it in so as to tell how far it is ironed," replied the little girl.—*Little Chronicle*.

NO DRINKERS NEED APPLY

The Interborough Rapid Transit Company which operates the elevated and subway railway lines in New York City, has put into effect a rule against drinking which is more rigidly enforced than any other. Even the odor of liquor on a man's breath will cause instant dismissal from the company's service, and all men being employed must sign a contract not to drink.—*Banner of Gold*.

Grammar
LessonsSEVENTH OR
EIGHTH YEAR

FOOD

WHAT is the essential nature of a food?
Why is one substance a good food
and another one a poor food or no
food at all?

What is a poison?

How does a poison act upon the cell tissues
of the body?

What is the difference between a food and a
poison?

These questions if rightly presented are not
too difficult for the consideration of eighth
grade pupils, and it is important that such chil-
dren everywhere should be able to answer them.

The question as to whether alcohol is a food
has been given considerable attention. If it is
a food, the fact serves as an excuse for drink-
ing. If it is not a food the children are en-
titled to know that it is not. If it is a definite
poison they are entitled to know this fact.

The teacher should inform herself upon this
subject. A number of the newer text-books
give definite and authoritative information upon
it, and various periodicals contain articles writ-
ten by men distinguished for their knowledge
along scientific lines. If within reach of a large
library, the teacher will have no trouble in se-
curing these journals, and librarians in smaller
places are often willing to receive suggestions
from teachers regarding matter for the reading-
room.

OUR NEED OF FOOD

Why do we get hungry?

Why can we get along without food for only
a few hours at a time?

Why do we get hungry sooner, and require
more food when we are at work than at other
times?

Why does exercising in the open air make us
hungry?

Why do people who do little or nothing have
less appetite than people who are active?

What is appetite?

How do we grow?

Why are your bodies larger than they were a
year ago?

After a person is full grown what is the chief
reason for his needing food?

What is meant by the tissues of the body
wearing out?

What must be constantly going on in the
body to replace worn-out tissues?

I have placed a bit of raw beef under the
microscope. You may all file around the room
and look at it.

Alfred, make a drawing on the blackboard to
illustrate what you saw.

It looked like a number of strings of tiny
round beads laid close together in long rows.

Turn to page — in your books and look at
the illustration.

What are these little things that look like
beads?

What is said about cells on page —?

Lillian, read it aloud.

How is each part of the body built up?

Why must cell-growth take place more rapid-
ly while your bodies are being developed than
after you are fully grown?

What supplies the material for building new
cells?

Why is it important that we should know just
what foods will best promote cell-growth?

Look up oxygen in your dictionaries.

Where is this gas found?

How long could we live without it?

Turn to page — in your books and see.

Stanley, read aloud what is said.

When I light this candle on my desk what
makes it burn?

What must always be present when anything
is burning?

Look up oxidation in your dictionaries.

Burning is always oxidation. Does oxidation
always produce flame? Why not?

Nellie, take this book from my desk, and
read aloud to the class what is said on page —.

Frank, state in your own words what she has
just read.

Oxidation must be very rapid to produce
flame; when it goes on more slowly the sub-
stance acted upon is burned, or broken up into
its original parts, without flame.

Place a drop of blood under the microscope
and let the pupils see it.

What are corpuscles?

What is the office of the red corpuscles?

Turn to page — in your books and see.

Sterling, read aloud what is said.

While the candle is being consumed, what is produced besides flame or light?

Oxidation which is not rapid enough to produce light may produce heat.

Why are our bodies warm?

Why are they warm all over?

How does the food we eat reach all parts of the body?

How does the oxygen in the blood act upon it?

Give one reason why oxidation is necessary to life.

What is meant by energy?

Look up that word in your dictionaries.

Read what is said about energy on page — in your books.

John, read it aloud.

What is another name for energy? **SEE —**

Mary, take this paper and read aloud what I have marked.

Harold, state what she has just read.

To keep the bodily processes going on, two things are necessary, heat, and work or force.

What is meant by bodily processes?

Give two reasons why oxidation is necessary to life.

Could there be any life without oxidation?

Why not?

If we ate no food, what would serve as material for oxidation in our bodies.

Why would a person who did not eat sufficient food grow thin?

What is meant by starving?

Could we live longer without food by keeping still or by moving about?

Look up hibernate in your dictionaries.

Think of an animal that hibernates

Why is such an animal very thin when it wakes from its winter's sleep.

KINDS OF FOOD

In opening the discussion of the kinds of food, the teacher may speak of some common example of fuel converted into energy. Perhaps the best at hand is that of the locomotive. She may speak of the fact that in order to make the engine work, fuel must be provided. She can tell them, too, that the fireman knows just how

much coal or wood it will take to make the engine go a given distance, and that large manufacturing and railroad companies analyze samples of coal that they may know which will give the greatest amount of force per ton.

The amount of heat and motion which fuel produces can be exactly measured.

We take food into our bodies to supply heat and motion, and it is also possible by testing that food to tell exactly how much heat and motion it will give. In many experimental stations and laboratories men are at work finding out just how much energy foods prepared in different ways will yield.

Food will give the same amount of heat and

energy if burned in a furnace, as when consumed in the body, but it would be too expensive and too bulky to use for fuel in an engine. Just so, some things that are called foods are too bulky and expensive to use in keeping up the bodily fires or processes.

If men take pains to buy the coal that will enable them to get the most work out of their engines, do you not think that people who have important work to do in the world ought to be at least as wise in selecting food or fuel for their bodies?

The engineer is particular also to use the kind of fuel that will produce the most power, and harm his engine the least. He would not think of using kindling wood or trash that

would burn fiercely at first and then go down leaving him far from the city he had started for. Neither would he burn gunpowder, for that might wreck his engine even though he used only a little at a time. He uses the most reliable fuel.

Children are often tempted to eat foods like candy, rich cakes, and pickles. These correspond to kindling wood in the engine. A little does no harm, but they do not furnish steady force. Alcoholic liquors, on the other hand, are like gunpowder in the engine, and just as likely to cause a wreck of the body.

So, then, we must consider which are the right kinds of food and what quantities we need



"Who gives himself with his alms feeds three, Himself, his hungering neighbor, and me."

in order to furnish heat and energy to the body without harming it.

Our bodies do for themselves something the engine can not. They repair themselves. So, in addition to heat and motion producers our food must also contain repair materials.

What should we consider in deciding what kinds of food to eat?

Why do we need different kinds?

Name several kinds of bodily tissue.

Would one kind of food be sufficient to make blood, build nerve-tissue, muscle-tissue, and bone-tissue?

Mention some foods that are good bone-builders.

What do you mean by cereals?

Mention a cereal that appears on the table at every meal.

Read what is said about bread on page -- .

George, read it aloud.

Find out before tomorrow all you can about milk, eggs, fish and all kinds of flesh-foods as muscle-builders, nerve-builders, and blood makers.

Why are starch and sugar necessary?

Turn to page -- and read.

Harry, read it aloud.

Why is common salt necessary?

Read on page -- .

Molly, read it aloud.

Why is water necessary? What is the consistency of food when it is ready for assimilation?

Ellen, turn to page -- and read what is said about pickles as a food.

Sarah, turn to page -- and read what is said about pie.

Mildred, turn to page -- and read what is said about candy.

What effect do pepper and other spices have upon the lining of the stomach?

Turn to page -- and read.

James, read aloud what is said.

IS ALCOHOL A FOOD

What is a food?

I will write a definition of food on the board for you to learn and remember :

A food is any substance whose nature it is when taken into the body to aid its growth or furnish energy for heat or work without injuring any of its parts.

What effect is produced upon the cell tissues of the body by food?

Could a substance which produced a destructive effect upon any of the bodily tissues be called a food? Why not?

What is the right name for such a substance?

Why is alcohol not a food when judged by this definition?

What becomes of alcohol that once enters the circulation of the blood?

Where is it carried?

What effect does it produce upon cell growth in general over the whole body?

Turn to page -- in your books and read.

Morley, read aloud what is said.

What is meant by preventing development?

Look up development in your dictionaries.

Would you call anything that prevents development a food? Why not?

What is meant by retarding growth?

Look up retarding.

Would you call anything that retards growth a food? Why not?

Would eating one kind of food day after day create an uncontrollable desire for that food?

A little alcohol often creates a craving for more. Is that like a food?

It has been declared that alcohol is a food because it is oxidized in the body and so produces a certain amount of energy.

Carbolic acid may be oxidized in the body and produce energy.

Would you call carbolic acid a food? Why not?

What must a food do in addition to producing energy?

Alcohol never does anything toward building up any tissue.

Look up narcotic in your dictionaries.

Read what is said on page -- in your books on narcotic poisons.

Ella, read it aloud.

Of all the tissues in the body, which is most easily injured?

Which is the most difficult to repair?

Upon which bodily tissue does alcohol do its most deadly work?

What is the only safe course to pursue in regard to any liquor containing alcohol?

AUTHORITATIVE QUOTATIONS

ALCOHOL NOT A FOOD

A poison never can be a nourishing substance. A poison destroys the vital parts of the body, while a nourishing substance keeps them in strength and repairs waste. One and the same substance can never combine the directly opposite results of destroying and preserving; and if I expect a poison to have a nourishing effect, it were just as logical to expect that a person who has a design upon my life would do his best to preserve it. . . . There is, in fact, no substance known of which it can be said that it is at the same time a poison and a nourishment.—MAX KASSOWITZ, M. D., Vienna, in *Die Abstinenz*.

ALCOHOL A HINDRANCE TO DIGESTION

As a tonic aid to digestion there can be no greater failure [than alcohol]. By its employment our patient often eats more than he would without it, but when he does so he merely forces his stomach to receive more than nature's good judgment considered it capable of digesting. So long as alcohol is present in the stomach, digestion remains at a standstill, as the pepsin, then free, is deposited. As a result, the food passes out of the stomach down the alimentary canal in an only partially digested condition. Diarrhoea or constipation and other digestive disturbances result from the irritation it produced.—EVAN O'NEILL KANE, M. D. in *American Medicine*.

Prof. Duggan of Johns Hopkins University

small or large, but always a poison, biologically or physiologically speaking."

ALCOHOL DIMINISHES WORKING ABILITY

Obviously only such substances can be called food material, or be employed for food, as, like albumen, fat, and sugar, exert a non-poisonous influence in the amounts in which they reach the blood and must circulate in it in order to nourish. Although alcohol contributes energy, it diminishes working ability. Very small amounts, whose food value is insignificant, show an injurious effect upon the nervous system.—MAX GRUBER, M. D., Royal Institute of Hygiene, Munich.

TOBACCO A CAUSE OF DYSPEPSIA

"Physicians meet with thousands of cases of



"And the sheep follow him, for they know his voice,
But a stranger will they not follow."

found that alcohol in any form retarded digestion of starch in a marked degree.

ALCOHOL A POISON

From an exhaustive definition we shall have to class every substance as a poison which, on becoming mixed with the blood, causes a disturbance in the function of any organ. That alcohol is such a substance can not be doubted. Very appropriately has the English language named the disturbance caused by alcoholic beverages *intoxication* which by derivation means poisoning.—ADOLF FICK, M. D.

DR. H. S. ANDERS of the Philadelphia Chirurgical College and author of a standard textbook of medicine says:

"Our modern knowledge of alcohol in the human body justifies the belief that in health it is never a food in any sense, be the quantity

dyspepsia connected with the use of tobacco in some of its forms."—REUBEN D. MUSSEY, A. M., M. D., LL. D., Late Professor of Anatomy and Surgery, Dartmouth.

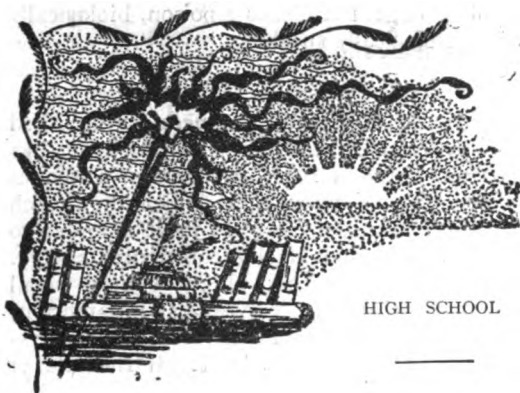
AN INDIAN SUMMER DAY

BY CHARLES HANSON TOWNE

When gray November shadowed all the land,
And June was but a distant memory,
God touched the lifeless summer's helpless hand,
And she awoke, and came to you and me.

Then, where the early snow began to fall
On hill and moor she walked with silent tread,
Bidding her golden glory cover all—
Then vanished like a spirit from the dead.

—*Youth's Companion*.



CIRCULATION AND ASSIMILATION

TO explain the circulatory system and the process of assimilation is easy when the person undertaking the explanation understands the subject. Assimilation is sometimes a difficult topic, even to teachers, but if not thoroughly mastered by them there is little probability that their pupils will carry away from the lesson any clear idea of what the lesson was supposed to teach.

The circulation of the lymph as well as the blood, the work of the capillaries, the way in which the tissues are nourished, and the processes of endosmosis and exosmosis should be part of the teacher's study-work for some time before attempting to present this subject to a class.

The instructor will also do wisely to require many drawings in note books and upon blackboards, for no method has yet been devised that will so certainly fix in mind the relative size, shape, and position of the chambers of the heart, the structures of veins and arteries, and the circulation of blood. Colored chalks and crayons are especially helpful in illustrating the venous and arterial circulation and the change from arterial to venous blood in the capillaries.

The pupils have been taken pretty thoroughly over the text-book work in the eighth grade, and in the first year of the high school should be ready to do original thinking and to search to some purpose among the reference books that are attainable.

CIRCULATION

Look at the web of a frog's foot through the microscope. If done properly this will not hurt the frog. A good way is to take a piece of thin wood about three inches by six and cut a hole half an inch in diameter in one end. Wrap the frog in a wet cloth and tie thread to two of its toes. Stretch the web across the hole and place under the microscope.

Let the class file around the room and observe the circulation of the blood in the frog's web.

What causes the blood to flow so rapidly?

What controls the amount of blood in the blood-tubes? Why is the amount in certain blood-tubes of our bodies greater at some times than at others?

Explain blushing.

Why is an angry person's face red?

Why does fear cause paleness?

What is the pulse?

Name parts of the body where you can feel the pulse.

Lay your forefingers on your cheeks just in front of the ears. Count the number of beats in a minute.

Stand and take gymnastic exercises for a few moments. Count the pulse again.

What is the advantage of the circulation of the blood.

What harm might be caused by defective circulation?

Why is exercise beneficial?

Place a drop of blood on each of several slides and cover quickly.

Select a slide that shows one or more white corpuscles and let the class observe them.

Let the pupils do this for themselves at intervals during the day, and make drawings in their note books, of red and white corpuscles showing the movements of the latter as actually seen by them.

The corpuscles are single cells. What are the three parts of a cell?

Which part is lacking in the leucocytes or white corpuscles? Why? What is the probable work of these cells?

Look up scavenger in your dictionaries. What need is there of scavengers in the body?

What is meant by resisting disease?

How do people usually contract disease?

What is a germ? Find out before tomorrow something about the discovery of germs and how this discovery has affected the treatment of diseases.

How does the amoeba secure its food?

The white corpuscles seem to do the same thing with disease germs. They enclose the germs within their own bodies and literally devour them.

What would probably be the result if the disease germs succeeded in overpowering the leucocytes?

Explain lymph gland by a drawing. What is the function of these glands?

What causes boils? What is pus?

What is the work of the red corpuscles?

Why is it necessary that oxygen be carried to all parts of the body? Explain oxidation. How

long could we live if oxidation in the body stopped?

What is the fluid in which the corpuscles float?

The teacher may quickly review, with the aid of a good model and blackboard drawings, the structure of the heart and the work of the auricles, ventricles, valves, and the positions of the large arteries and veins.

What is the structure of an artery?

How does elasticity differ from muscular contraction?

Why does the blood come in spurts when an artery is cut?

Tomorrow let each one be prepared to illustrate some method of quickly stopping the flow of blood from an artery.

Why does the blood flow evenly and slowly through the capillaries?

What is the pulmonary circulation?

What exchange takes place in the capillaries of the lungs?

What is the special function of capillaries in other parts of the body?

Could the work of nourishing the tissues be performed by the large blood-vessels? Why not?

How do the veins of the body differ from the arteries?

What is the portal circulation?

What is the work of the liver?

ASSIMILATION

What is chyle? What is the consistency of chyle?

What is the work of the intestinal villi?

What are the lacteals?

Look up osmosis in your dictionaries.

The day before giving this lesson let the pupils perform some simple experiments illustrating osmosis. Let them take some pieces of bladder and tie over the ends of glass tubes. Pour into the tubes a solution of sugar, filling them to the depth of several inches. Suspend the tubes, the upper ends being left open, in

glasses of water. The liquid in the tubes will soon begin to rise, being increased by the water passing through the bladder tissue. Explain the reason.

What is the thoracic duct? Where is it?

What is lymph? How is it different from blood? What are the lymphatics?

Where does the mixture of chyle and lymph enter the blood?

What is the shape of the cells which compose the bodily tissue? Could they be packed together without leaving spaces? Why are these spaces called lymph-spaces?

Explain endosmosis and exosmosis as applied to the work of the lymph in nourishing the cells and carrying off waste matter.

What is meant by cell-exchange? How would it be affected by exercise?

EFFECT OF ALCOHOL ON THE BLOOD

In your lesson on the skin you studied the affects of alcohol on the amoeba. How much alcohol in a drop of water was necessary to paralyze the amoeba?

In what respects are an amoeba and a leucocyte similar?

lar?

Alcohol effects a leucocyte just as it did the amoeba — it paralyzes it.

Considering the special function of the leucocytes, is it wise to disable them?

What would be the result of compelling the red corpuscles to take up less oxygen than they should?

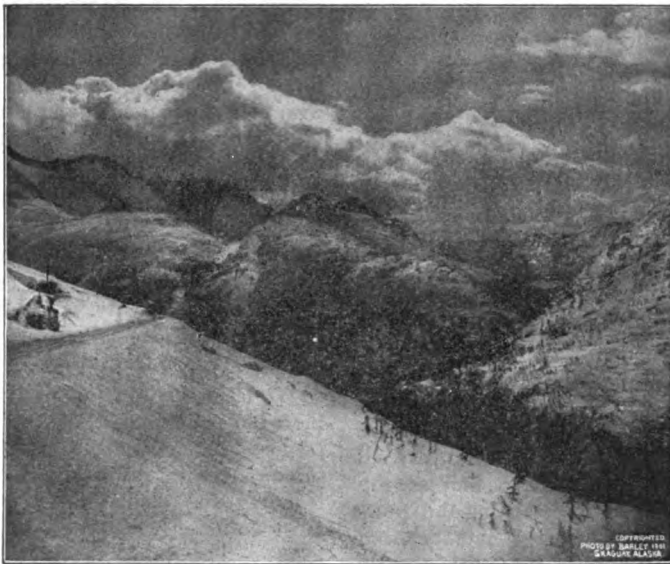
What would be the further result of affecting these corpuscles in such a way that they would be unable to give up to the tissues even the amount of oxygen they had been able to absorb?

Find out before tomorrow all you can regarding the effect of alcohol on the red corpuscles.

AUTHORITATIVE QUOTATIONS

ALCOHOL WEAKENS THE HEART

Alcohol produces an increased heart beat, a



"Thanks for the fleeting beauty vast and high,
With all wild loveliness that can touch the immortal in a man."

fuller pulse, and a redder skin. It calls upon the reserve power of the organ, but the moment the effect has passed off the action of the heart actually weakens.—SIR FREDERICK TREVES, M. D., LL. D., F. R. C. S., Surgeon to the King.

In strict training just those agents and influences are eliminated which either directly or indirectly depress the heart and interfere with its muscular vigor—as for example—alcohol and tobacco. They are avoided when the heart is to be driven at high pressure lest their tendency to cause myocardial weakness and to favor dilatation should come into play.—H. A. CALEY, M.D., M. R. C. P., London.

ALCOHOL HARDENS THE ARTERIES

A man is as old as his arteries. If a man is 40 years of age and his arteries are as if he were 80 years of age, the man is that age, as far as his chances of life are concerned. Alcohol is only one of the causes of this hardening, I admit, but it is an important one.—G. SIMS WOODHEAD, Professor of Pathology, Cambridge University, Eng.

ALCOHOL A TEARER DOWN OF BODILY TISSUE

Food is a builder up and supporter of bodily tissue, while alcohol is positively a tearer down and damage to it.—D. H. MANN, M. D.

Since alcohol is physiologically a poison and not a food, and essentially a drug and not a drink, the effects of its habitual ingestion are directly to produce degeneration of nearly all the bodily tissues, and indirectly to increase the liability to many diseases by lessening the powers of resistance, thus favoring fatality from such disease. Impairment of digestion is early noted.—JAMES M. ANDERS, M. D., Ph. D., LL. D.

ALCOHOL HINDERS NUTRITION

It [alcohol] paralyzes the capillaries in which the vital acts of nutrition and the production of animal heat and force are carried on. Alcohol diminishes the power of osmosis of the membranous tissues of the body. It also blunts the power of chemical affinities between tissues of the body and the fluids of the blood.—I. D. MISHOFF, Milwaukee.

"November woods are bare and still;
November days are bright and good;
Life's noon burns up life's morning chill;
Life's night rests feet which long have stood;
Some warm, soft bed, in field or wood,

"The mother will not fail to keep
Where we can lay us 'down to sleep.'"

BOOK NOTICES

WEBSTER'S MODERN DICTIONARY, INTERMEDIATE EDITION, compiled by E. T. ROES, LL. B., Published by Laird & Lee, Chicago, 458 Pages. \$1.42.

This new compilation (1905) from Webster's New Standard Dictionary for all intermediate grades is of convenient size, strongly bound in silk cloth, and printed upon good paper with ample margins. It should be a pleasure for pupils to consult it, for the words are printed in such bold type as to be easily found and the definitions are clear and concise. There are also many new words which have come to be a part of our language during these years of unprecedented progress in the arts, science, and commerce. The pages devoted to word-building and rules of spelling will be especially helpful to teachers as well as pupils, while the foreign phrases, abbreviations and metric tables with their equivalents complete the list of desirable references. A number of illustrations, including those of all the presidents, and the flags of the nations in colors add to the attractiveness of this little lexicon.

FIFTY ENGLISH CLASSICS BRIEFLY OUTLINED, By Melvin Hix, B. E., Teachers' College, Columbia University. Published by Hinds, Noble and Eldredge, New York City. 288 pages. Price \$1.25.

While in the making of books on literature there has been no end, this well bound, carefully printed volume of Professor Hix's is the first to give systematic and logical outlines for the teaching and study of those English classics most commonly required in schools and colleges. The book is intended primarily for teachers who through lack of specific training or press of work especially need crisp, condensed notes covering the important teaching points, and criticisms on style judiciously culled from many authorities, as well as skilful plot analyses. It will prove even more helpful to those who do not have ready access to reference libraries or who are seeking self-culture through a study of the English masterpieces of drama, poetry, fiction and essay.

PHYSIOLOGY TOPICS FOR NOVEMBER

PRIMARY—Food and Drink; Nutritious, Harmful. Sense of Hearing; Location, Care, Training. Tobacco: how harmful, why.

INTERMEDIATE—Necessity of Food and Drink. Process of Growth. Blood; Serum, Corpuscles. Eye and Ear Structure, Care, Training.

ADVANCED—Liver; Structure, Functions, how affected by Alcohol. Food. Absorption. Assimilation. Oxidation. Circulation.

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THE SCHOOL PHYSIOLOGY JOURNAL



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PUBLISHED AT
BOSTON, MASS.
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VOL. XV. NO. 4
DECEMBER, 1905

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School Physiology Journal

Vol. XV

BOSTON, DECEMBER, 1905

No. 4

THE BRIGHT SIDE

BY WILLIS BOYD ALLEN

TWO sorry things there be ;
Ay, three ;
A nest from which the nestlings have
been taken ;
A lamb forsaken ;
A red rose by the wild wind rudely shaken.

Of glad things there be more ;
Ay, four !
A bird above the old nest blithely singing ;
A red rose clinging
In safety to a rock ; a shepherd bringing
A lamb, found, in his arms ; and—Christmas
Bells a-ringing !

A YEAR OF UNPRECEDENTED PROGRESS

BY MARY H. HUNT

IN estimating the strength of a nation, inas-
much as the character and achieving abil-
ity of its people are more than the wealth
of its mines, fields, and factories, we do well in
the midst of the greatest material prosperity a
nation ever enjoyed to pause and inquire what
of the progress of the battle against the use of
alcoholic beverages, because the use of such
beverages is the greatest of all menaces to the
material, moral, and spiritual welfare and
achieving ability of any people. The saloon in
this country stands for alcohol with all its dire-
ful consequences. Therefore, when we tell
whether we are gaining in the battle against the
saloon we are telling whether our nation is on
the up or down grade in the progress of Chris-
tian civilization.

To insure success, our battle against alcohol
must be concentrated on the cause that is re-
sponsible for alcoholic habits and consequent
degeneracy. That cause is misapprehension as
to the real nature and effects of alcohol, and
the education that will remove this misappre-
hension must reach the whole people.

For centuries human beings have believed
and acted on the belief that alcohol, taken in
moderation, is a safe beverage, ignorant of the
truth that it is the nature of this substance when
moderately used to lead to its immoderate use
and to consequent destruction. If we are gain-

ing in correcting this fatal popular misappre-
hension we are moving upward. What do the
reports of this year show?

THE FACTS ARE WITH US

For the last twenty-five years science has
been pouring in her testimony against alcohol,
and never more clearly than during the past
year. The gist of this testimony is well given in
the following sentence in an article by Sir Fred-
erick Treves, M. D., of England, Surgeon to
the King :

"Alcohol is an insidious poison with only
one antidote,—alcohol again." Another au-
thority comes to the equally terse conclusion
that "We must exterminate alcohol as a bev-
erage or it will exterminate us."

The *London Times*, referring to this great
volume of scientific testimony, and to the plan,
new there, of teaching the same as a part of hy-
giene to the children in the public schools of
the United Kingdom, looks forward confidently
to a time when "a belief in the strengthening
and supporting qualities of alcohol will become
as obsolete as a belief in witchcraft."

THE MEANS OF SPREADING THE TRUTH IS AT HAND

The testimony of science as to the character
and effects of alcohol, as it has accumulated
during the past twenty five years, has been col-
lected in this country and is on file for ready
use in our Bureau of Scientific Temperance In-
vestigation, and is and has been of invaluable
service both in defending and advancing the
truth that is the fundamental weapon in this
warfare.

This nation of 80,000,000 people legally re-
quires that these truths in connection with other
laws of health shall be taught the 22,000,000
children of school age through the public
schools. Temperance education laws alone
amount to little. Sweden, for example, has had
for years a temperance education law which
has been comparatively useless because that
country has had practically no temperance phy-
siology text-books in the Swedish language.

We have a large and increasing variety of
text-books on this subject adapted to all grades
of pupils, which the combined powers of evil
have tried in vain to prove inaccurate. We
have carefully graded courses of study showing

just what should be taught progressively from the first primary through the first year of the high school. We have also an educational journal which gives the needed pedagogical information to the teachers of this branch. Thus we have the same help for the pursuit of this study that we have for others, in other words, we have all the machinery needed to secure the education of our coming citizens in the truth against alcohol and in favor of obedience to the laws of health. Everything is ready at hand to do with.

THE INDIVIDUAL BEHIND THE MACHINE

But here, as in every case, the individual behind the machine is an essential factor in the output. The first individual influence in this case is the mother heart. Are the mothers and other Christian people awake to their responsibility in looking after the details essential to the enforcement of these laws in the schools of their own localities and states? If they are, the prophecy will be realized that "America will yet produce the finest type of human beings the world has ever seen." What do the reports of this year show?

NEW ENGLAND

In the New England division of our country, Maine, New Hampshire, Rhode Island, and even Connecticut which has weakened its scientific temperance instruction law report gain in increased interest in the study and consequent gain in temperance sentiment. Maine has adopted for the entire state the International Course of Study. The report adds, "To scientific temperance instruction in the public schools is largely due the strong temperance sentiment existing in Maine today. When our legislators have turned down some attack upon our prohibitory law it is no uncommon occurrence for some of our prominent men to pay a glowing tribute to this instruction and the results which it brings about."

The subscriptions for the SCHOOL PHYSIOLOGY JOURNAL are a good barometer of the interest of any locality in temperance physiology. There is need of gain in this respect for New England. That the cause has prospered to an extent despite the influence and unjust attacks of the Committee of Fifty and their allies, a committee which has been powerful in this section, is evidence of God's plans of mercy for our race.

MIDDLE AND MIDDLE WESTERN STATES

The reports from the middle and the middle western states, including Kansas, Nebraska, Missouri, and the Dakotas are highly encourag-

ing. This means much for the future of our nation, showing that we are not on the losing but on the winning side in the educational battle against alcohol and its consequent degeneracy, for in these states is a majority of the 80,000,000 people of the United States. When a majority of the people of this republic realize that we must exterminate alcohol as a beverage or it will exterminate us, we have passed the danger line.

New York, our most populous state, has a stringent law fairly well enforced. Every child in her public schools is legally required to have at least thirty lessons per year in this study which is resulting in a marked growth in temperance sentiment throughout the state.

Sentiment favorable to this study on the part of superintendents and principals of schools is reported throughout this section of the middle and middle western states. The president of the National Educational Association, who is also superintendent of schools in Pennsylvania, has recommended the International Course of Study for the schools of that state. The State Teachers' Association of Nebraska has recommended the same Course for adoption by the next meeting of that body.

In the District of Columbia the outlook is very encouraging. The *New Century* indorsed physiologies have been adopted in the first three grades and in the sixth, with good prospects for the seventh and eighth later on. The superintendent of schools declares that scientific temperance shall be satisfactorily taught hereafter.

THE ROCKY MOUNTAIN AND PACIFIC COAST STATES

The Pacific coast states with Colorado and Montana report gain in enforcement of their scientific temperance instruction laws and in enthusiastic co-operation of teachers and parents in this education for the children. California is in the midst of a struggle for the adoption of a greatly needed series of indorsed text-books in temperance physiology to take the place of the defective state books. Here, as in other states, there is an urgent call for competent instruction at institutes and for other helps for teachers on this subject. The following sentence from the report of Southern California shows a grasp of the deep meaning of this temperance education movement:

"The full dignity and tremendous possibilities of this national opportunity are but beginning to be realized; and, if we but do our part faithfully, the coming generations are won for purity and temperance."

Montana reports, "If we can keep and enforce our scientific temperance instruction law, the time is not far distant when prohibition will be established."

THE SOUTHERN STATES

The reports from the southern states show a gain as compared with preceding years.

Tennessee has had the past year a sharp fight for the adoption of a graded series of scientific temperance instruction text-books. Although they lost the battle, it had an educating influence. They will win next time.

Kentucky has secured for the state the adoption of two books of the *New Century* series for the next five years. It is a matter of regret that the adoption did not include books for the lower grades as well as those for more advanced classes.

Mississippi school officials support the law; a set of textbooks has been adopted for the state which are now going through revision to our standards by the National Scientific Temperance Department, with the expectation that these will soon be indorsed.

Virginia has pushed the prize essay work with fine results; gained the attention and interest of the institute superintendent and 1000 teachers, and persuaded at least one county to place the JOURNAL in every school.

The state president of Texas, Mrs. Helen M. Stoddard, sends the following incident related by a state legislator as to the influence of scientific temperance instruction in her state, two-thirds of which is under prohibition law:

"One of my constituents on the Rio Grande, a wine grower, is very proud that his boy will not touch his wine. He says, 'My poy iss de smartes' poy in Texas. He vill not touch my vine, and it iss de pest vine ever made, but dat poy studies in de pooks dat it iss pad, and he touch it not. He iss de smartes' poy! I tells you.'"

Certain states have done particularly good work along certain lines of scientific temperance and deserve special mention.

In New England, New Hampshire points to an entire change of sentiment on the part of the whole community from indifference or opposition to a belief in this teaching.

In the middle and middle western states, Delaware has developed prize essay work to a high degree of perfection and has voted to put the JOURNAL in every school in the state.

In the western states, California reports remarkably fine work in scientific temperance in many of the colleges and higher institutions of learning.

Any one who turns over the files of the reports of this work for the last ten years will see that while there has been a steady gain in a sort of geometrical progression from year to year, the gain this year far exceeds that of any other like period.



"The lasting glory of our life depends
Upon a little child, a stable, and a star."

TWO CAUSES FOR THE
INCREASED GAIN

First, the wide reading throughout the country of the government document, Senate Document No. 171, the *Reply* to the Committee of Fifty, which not only exposed the fallacious charges of that committee against the accuracy and desirability of this study but showed that the committee's own experiments, when honestly interpreted, proved the statements in the indorsed books concerning alcohol to be accurate.

Second, the action of the British medical profession, 15,000 strong, which, profoundly moved by the greater sobriety and consequent greater producing ability of the American workmen, has petitioned for such public school study of hygiene and temperance as we

have in America and, acting through a committee of distinguished scientists, has recommended the course prepared by this Department to every school board in England, Scotland, Ireland, and Wales.

These two pieces of evidence removed the last doubts as to the accuracy and desirability of our public school teaching concerning alcohol and other laws of health, doubts that until removed dampened the ardor of otherwise enthusiastic friends of this educational method for preventing the greatest curse of our age, alcoholism. The defense of the truth has been God's work and "it is marvelous in [our] eyes."

INDORSEMENT OF AMERICAN PHYSICIANS

American physicians are also among the warm advocates of this form of education. At the last annual meeting of the American Medical Association, physicians representing the Society for the Study of Alcohol and Other Narcotics unanimously and enthusiastically passed resolutions declaring that the public school teaching of hygiene and physiology, including the nature and effects of alcohol and other narcotics, is resulting in better obedience to the laws of health and in a growing sentiment in favor of public sanitation and total abstinence, and in the rapidly increasing prohibition of alcohol in industrial employments.

Another national medical society, the American Academy of Medicine, at its last annual meeting paid a glowing tribute to the present school literature on temperance physiology. The committee presenting the report traced the evolution of the books from the beginning to the present, pointing out the great progress in form, style, subject matter, and adaptation to grade, and declared that "the indorsed books thus far have initiated the majority of practical improvements, are better adapted, more nearly complete, and more nearly on pedagogic lines." The *New Century* series in particular is commended for its manifest superiority.

The advantages of "indorsement" of physiologies is also set forth by this committee.

Indorsement means that a committee of specialists, at present six in number, and including the president of the Illinois State Board of Health, a member of the faculty of the New York School of Clinical Medicine, physicians, a distinguished clergyman and philanthropist, together with the national superintendent of this department, "trained by years of practice in criticism of school physiologies, students of the problems involved from teachers', pupils', authors', public, and scientific temperance view points, systematically go over the volume, noting not only errors as to the nature and physiologic effects of alcohol, but also errors of English, indefiniteness, illogical statements, repetition, exaggeration, unnecessary difficulties, unsuitable words, inconsistencies, dogmatism instead of explanation, scientific inaccuracies, poor taste."

The advantages of such an examination are too obvious for comment. There are ample openings also, as is stated by this committee, "for other text-books, methods, teachings, to any interested in hygiene including temperance for physiologic reasons, who *have the capacity* to take advantage of such openings to demonstrate better ideas."

REVISION OF TEXT-BOOKS

The triumphant refutation of every attack

upon scientific temperance instruction is bearing rich fruit in the correction of public sentiment. This is shown by the fact that authors and publishers of books issued under the influence of Atwater and his school are now seeking to have their books revised in accordance with the standards first established in our own country and now being adopted by other nations, and which are supported by the findings of the Bureau of Scientific Temperance Investigation.

This is an epoch-making event, and shows not only the triumph of truth but that it is to be universally given to the children of this country in language adapted to all grades of our public schools.

IMMIGRATION

The emergencies of our times demand still greater gain for the coming year if we are not to retrograde.

During the last two years, 2,000,000 people have come to our shores from other lands bringing with them old world drinking ideas and habits. All too soon the male adults among them, if we do not teach them better as we may through their children in our public schools, will swell the license vote, thus helping to fasten upon us that abomination of desolation, the saloon.

We have no other institution which reaches these people and all others so universally as do our public schools. These foreign born children are in the greatest numbers in the lower grades of these schools. There they can be taught in simple language God's reasons for total abstinence written in their own bodies, and that such abstinence means true liberty. To neglect to teach this subject throughout the grades, with every possible help of suitable books for pupils' use as soon as they can read, is to give the future of our country to the pitiless saloon.

CIGARETTE SMOKERS AN EVIDENCE OF THE NEGLECT OF THIS STUDY IN THE LOWER GRADES

The fact that so many school boys of today are being ruined by smoking cigarettes is *prima facie* evidence that school officials are neglecting to provide, as the law requires, for the pursuit of this study with its warning against tobacco as well as all other narcotics in the lower grades, beginning with the first primary. The cigarette fiends come from schools where this study is not begun regularly, with books for pupils' use, until the fourth or fifth grades or later. This is beginning too late, because it comes after the habit has been formed.

WORK AT DEPARTMENT HEADQUARTERS

The growth of this work throughout the country has given us at 23 Trull street, the national

headquarters of this Bureau and Department, a year of exhausting labor. More than 10,000 letters have been sent out the past year to every part of the world by this Department and more than 1,000,000 pages of printed matter have been issued, including the SCHOOL PHYSIOLOGY JOURNAL and leaflets meeting every phase of the need as each has manifested itself.

The work of revising text-books has been and is unusually arduous, calling for expensive research through the Bureau of Scientific Temperance Investigation. Five secretaries are constantly employed, and another is imperatively needed. If the demands of the work, financial and otherwise, can be met, the prospect now is that it will not be long before all the school literature on this subject will be abreast of the latest findings of science, which teach unqualifiedly total abstinence from alcohol and other narcotics, as well as obedience to the other laws of health.

Then give us ten years of thorough enforcement of our temperance education laws, especially in the lower grades, and a new generation of intelligent total abstainers will take the place of the saloon patrons and voters of today. It depends upon the temperance people of America whether this prophecy is fulfilled.

From the Annual Report of the Department of Scientific Temperance Instruction, to the National Convention of the Woman's Christian Temperance Union, held in Los Angeles, Cal., Oct. 27-Nov. 1, 1906.

THE POWER AND THE GLORY

BY EMERY POTTLE

Strange, we so toil to fashion for our unseen ends

The splendors that the tarnish of this world doth mar,—

Such palaces that crumble to a ruined age,
Such garbled memories upon Fame's fragile page,—

When all the lasting glory of our life depends
Upon a little Child, a stable, and a star.

CHRISTMAS RADIANCE

BY C. JELF-SHARP

WHEN day draws near its close,
The liberal radiance of the western
skies
O'er land and sea before our gladdened eyes
A sunset glamour throws.

And Christmas-time thus comes,
Heaven-sent, to light the evening of the year
And scatter kindly radiance far and near
Upon our hearts and homes.



"Her lips are warmed with mother-love
And blessedness."

Lift up your eyes, and
fill
Your minds, my friends,
with freely given light !
Open your hearts to radi-
ance still more bright—
The spirit of good-will !

SLEEP WITHOUT DRUGS

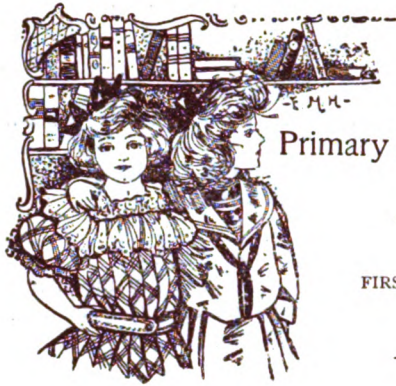
Wakefulness is caused by too great a supply of blood in the brain. Whatever, therefore, tends to decrease the force and volume of the blood stream which supplies the brain will naturally tend to promote sleep.

Long, deep breathing increases the supply of blood in the lungs and calls it away from the brain. Provide every facility for admitting pure air to the sleeping rooms. Open windows and doors, avoiding draughts. Have an ample supply of warm, light clothing on the bed. Breathe slowly and deeply until sleep comes.

A warm foot-bath or a glass of hot water or milk will call the blood away from the brain to the stomach. See that the feet are thoroughly warm before going to bed.

Take plenty of outdoor exercise, walking, riding, bicycling, swimming, rowing,—whatever may be most convenient; eat simple, easily digested food, including a good supply of fruit; avoid all kinds of alcoholic drinks, drugs, even tea and coffee; and drop all worries and disturbing thoughts, substituting a feeling of good will toward the rest of the world.

Try this prescription if you do not sleep well.



Primary Lessons

FIRST YEAR

GROWTH

TO illustrate this topic, the teacher should have planted about three weeks before-hand beans or corn in four pots.

The first pot should contain good earth, be well watered, and stand in a sunny window. The second should have good earth and stand in the sun, but without water. The third should have plenty of water and sunshine, but be filled with sawdust. The fourth should hold good earth and be well watered, but stay in the dark. It would be interesting also to have a sprouted acorn or some other seedling with the little tree just growing out of it to show the class.

WHAT GROWTH IS

When you put on the clothes which you wore last year, they do not fit you. Why not?

See this shoe (holding up a baby's shoe). Four or five years ago you wore a shoe like this. Can you put it on now? What has happened to your foot?

GROWTH OF PLANTS

Here is a bean (holding it up for inspection). Three weeks ago I put a bean that looked just like this one in this pot of earth.

I put the pot in the window where the sun shone on it, and watered it every day. What do you think happened to the bean I planted?

Three or four days later I found a tiny green sprout growing from it. I watered it well and soon I had this little plant (holding up the plant before mentioned).

What has grown in the three weeks? The bean has grown.

Let us find out what is needed to make the bean grow.

Blanche and Richard decided one day that they wanted to have some plants. They went to mother and she gave each one a few beans and a flower pot.

"Fill your pots with earth and plant the

beans." said mother. "It will not take long for them to sprout."

So Blanche and Richard ran out into the garden, filled the pots with earth, and planted the beans. They watered them well. Richard said,

"I shall put mine in the nursery window. That is a good place for it."

But Blanche said, "Oh, no! I am afraid mine would get broken there. I shall put mine in the closet."

Richard put his on the window sill and forgot all about it. At first the sunshine and the moist earth in which he had planted it were good for the bean, and it started bravely to spring up.

Blanche, on her part, took great care of her bean. She watered it every day, and hers began to grow.

About three weeks later mother asked the two children about their plants.

"Oh, I forgot all about mine," said Richard. "I'll go find it."

After a few moments he returned with his plant which looked like this: (Teacher shows the plant that had no water).

What was the matter with Richard's plant? Why did it not grow?

What is one thing that all growing plants need?

They need water.

Blanche brought her plant out of the closet.

"Oh! mother," she said, "I don't know what is the matter with mine. I have watered it every day but it doesn't look very green."

She brought her mother a plant like this: (Teacher shows the plant kept in the dark).

What was the matter with Blanche's plant?

What does a plant need besides water to make it strong? It must have sunshine.

"Well," said Richard, "if water and sunshine are so good to make plants grow, I'm going to have a plant that gets a great deal of both."

So he threw his poor dried-up beans away and filling a jar with sawdust and water, he planted some more beans and set them in the window.

At the same time Blanche put some fresh beans into a pot of earth and set it beside Richard's in the sun.

In a few weeks Richard's plant looked like this, (holding up the bean planted in sawdust). But Blanche's had grown into sturdy plants like these, (showing good plants).

What had Blanche's beans that Richard's had not? Earth.

Plants get food from the earth.

What three things do plants need in order to grow well?

They need water, sunshine, food.

SENTENCES

Plants need food.
Plants need water.
Plants need sunshine.
They can not live without them.

GROWTH OF ANIMALS

Here is a little kitten which Mary has brought to school. What will the kitten grow to be some day? A big cat.

What does the kitten need if she is to grow big? Food.

Does she need anything else? Water.

Kitty must eat and drink.

But if kitty were shut up in a tight box with plenty to eat and drink, would she be happy?

She would die without fresh air.

Kitty must have food, water, air.

Does kitty just eat, drink and breathe? She runs and plays,—she needs exercise.

After she has played a while how does she feel? When she is tired what does she do?

She needs rest and sleep.

The kitty has to have food, water, fresh air, exercise and rest.

GROWTH OF CHILDREN

How many of these things do boys and girls need? Do they need food?

When do you eat?

When you are hungry.

When do you drink? When thirsty.

When do you need fresh air? All the time.

When do you need exercise? Every day.

When do you need to rest? When tired.

George and Henry were next door neighbors.

They were the same age, and every birthday they stood up against the wall, and their fathers drew lines to show how tall each boy was.

They kept along pretty evenly until the fifth birthday.

George was very fond of playing ball, flying a kite, and rolling a hoop. He used to play out of doors before school and after school.

My, how hungry and thirsty he was when meal time came! He would eat a bowl of oatmeal, bread and butter, and other good things.

When night came he was ready to go to bed and sleep till morning.

Henry did not like to play out of doors.

He ate a great deal of candy and cake. At meal time he was not hungry.

When evening came he was not ready for bed, and he would beg to sit up till late.

When the next birthday came George had grown fast. He was tall and strong and well.

But poor Henry! not only had he failed to grow so tall, but he was pale and ill.

He needed good food and water, fresh air, plenty of sleep, and exercise.

What are the five things that we all need?

We need good food, water, fresh air, plenty of sleep and exercise. Without them we can not be strong and well.

SENTENCES

We must have food.

We need water.

We can not live without air.

We need exercise.

We should have plenty of sleep.

HINDRANCES TO GROWTH

What kind of food is good for boys and girls?

Name some kinds of food that will make you grow strong.

What kind of food ought we to eat?

Name some things that are not good for boys and girls.

Is candy a good food? Name some kinds of candy that are good if you do not eat too much.

When should we not eat candy? When may

we eat it without harm?

What must we have besides food?

What are good drinks?

Name some drinks that are not good for boys and girls; some that we should never taste.

When the sunshine comes in the window, what do you see in the sunbeams? What are those specks?

If I should shake some pepper in the room, what would you have to do?

Air that is full of dust or pepper or anything else is not good for us. We need pure air to breathe.

If some one were smoking in the room what would happen to the air? Is air filled with tobacco smoke good to breathe? Why not?



Waiting for Santa Claus.

How about the person who is smoking—can he help getting some of the smoke? Is it good for him?

A boy who smokes cigarettes seldom grows tall and strong and straight.

Let me tell you a story about

THE BOY WHO STOPPED GROWING

There was a little boy named Harry who lived in the country.

All day long he lived out doors, and his cheeks were as red as apples.

His father kept cows and Harry had plenty of nice milk to drink. There were hens, too, on the farm and every day Harry had a nice fresh egg.

Do you wonder that he grew fast?

He was the strongest boy of his age in the village. He could run farther and faster than Sam who was a year older.

In school he did well in his studies, and when the teacher asked for a boy to do something for her, there was never a boy more willing and kind than Harry.

His teacher said at Christmas that if he did as well the second half of the year as he had the first he should have double promotion. How pleased Harry was as he went home and told his mother!

But the last of February the teacher began to think that something was the matter with Harry. Instead of doing good work in school, he began to fail in his lessons.

Day after day he answered "I don't know" to her questions.

He was cross and fretful. His mother noticed that he did not eat much dinner or supper. He wanted to go off alone.

One day the teacher was going along the road at dusk. She smelled tobacco smoke.

What do you think she saw?

Harry was coming, smoking a cigarette.

Now she knew what was the matter with him. He told her that he had been smoking for several weeks.

His teacher told him how much harm cigarette smoking does boys who are growing. It hinders their growth, makes them dull, and gets their bodies out of order.

Harry promised her that he would not smoke any more, and he did not, although he had a hard time trying to stop.

SENTENCES

Rich food is not good for me.
I do not drink tea and coffee.
Wine and beer will hurt me.
Smoking will make me dull.

ACTIVITIES OF THE BODY

SECOND YEAR

PLEASE tell me the names of some things that are useful, and why they are so.

Name a part of your body and tell its use.

Which do you think is the most useful part of your body?

With which part can you do the most things?

What parts of his body does a carpenter use when he builds a fence?

A shoemaker when he makes a shoe?

The photographer?

The person who telephones?

The man who keeps the street lights in order?

The farmer? the sailor? the soldier?

The bird in building its nest?

The beaver in making its home?

Ask several children to stand and name a very useful part of any animal.

Why can you do more things than an animal can?

What can they do that you can not do?

What parts of your body can you lose and still live?

What parts do you need to keep you alive?

Name the parts of the head. How is each part useful to you?

Name the parts of the arms. Tell some of the ways in which each part is useful.

Why does your body need a head? a neck? arms?

Name the parts of the body trunk; the parts of the leg. How is each useful?

Why does your body need a trunk? legs? feet?

THINGS TO REMEMBER

We need all parts of our bodies.

Each part has work to do.

The head and the trunk hold the parts that keep us alive.

We do most of our work with our head and upper limbs.

The lower limbs carry us where we wish to go.

HOW THE BEAVER BUILDS HIS HOUSE

If possible, show a picture of a beaver. See that the children have a reasonably clear idea of his size and shape.

I am going to tell you about an animal that can build a strong house, so strong that wolves and other wild animals can not tear it down.

Mary and John may each bring me their foot measures and place them end to end. That will show you how long the beaver is, besides his tail which is two inches shorter than a foot. How long is the tail?

Beavers are covered with two kinds of hair, one grayish, silky and short, the other much coarser and longer, reddish brown in color.

Beavers never travel or live upon land if they can help it. They like the water better.

Their hind feet are webbed to the nails (explain), and when they swim they use only the hind feet, guiding themselves by the tail.

The tail is broad, flat, and oval and covered with scales instead of fur.

They have very sharp, hard teeth which last them a life time.

When a beaver wishes to build his house, he chooses a place where the water is rather deep. If he does not think it deep enough he builds a dam to make the water deeper.

What does he get to build this dam?

He looks about and picks up stones and bits of floating wood, and gnaws off branches of willow and birch trees. He carries the wood in his teeth, the mud and stones in his fore feet.

Now you see why he does not use his fore feet in swimming.

If he did not make the dam strong, the water would soon wear it away, or break through it.

When the dam wears out he can mend it.

He uses the same kind of material for his house that he used for the dam. He builds it at night.

When autumn comes, he covers his house with soft mud. This freezes when the cold days come. It becomes almost as hard as stone, and no wild animal can pull it down.

One house will usually hold four old beavers, or six or eight young ones. You may have been told that the beaver plasters the mud on the house with his tail.

People used to think he did, but now we are told that he uses his broad flat tail to guide him as he swims, not in plastering the house.

If you went to school to a beaver what could you learn from him?

(Bring out the idea of diligence as well as skill.)

MUSCLES

THIRD YEAR

LAST year you learned that your skeleton is covered with something besides skin. What is it? (Get the word, muscles.)

Find a large bunch of muscles in your upper arm. Of what use are they?

In what other parts of your body do you find strong muscles? What is their use?

Why are your muscles covered with skin?

What men have large, strong arm muscles?

What men have large, strong leg muscles?

What has made their muscles large and strong?

Place your hand on your chest and take a long breath. What do the chest muscles do?

Can you buy large, strong muscles? We will find out how we can get them.

When you go nutting, the longer you pick the more nuts you have. Can you get more muscles than you now have?

You can not get more muscles, but you can make those you have larger and stronger.

Suppose there were a number of children living in the same house and there was no one to care for and clothe them. If a basket of clothing were taken into the house, one child could come and take a coat, another a dress, another a hat, another shoes and taken what he most

needed.

After you have taken food into the stomach, the blood carries the food through the body and each part of the body takes the kind of food it needs.

The muscles get what they need, if we eat the right kind of food.

Can you tell me why the muscles do not get too large if they are taking in food every day?

When you use a knife in whittling, it wears away, bit by bit, until the blade is narrower than when it was new. You can not replace these bits; the blade remains narrow.

Your muscles are constantly wearing out, but



"Hail to December!
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How about the person who is smoking—can he help getting some of the smoke? Is it good for him?

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the food you have eaten takes the place of the worn-out matter.

Muscles need food.

There is something else that will make muscles larger and stronger. When you have been sitting too long, mother says, "Run out and take a little———?"

Muscles need exercise.

When you exercise so long that your muscles feel tired, what do they need?

Muscles need rest.

(Write the three statements about muscles on the board.)

Your muscles can not grow when they are tired. They need ten or more hours of rest every night.

Exercise is good for muscles, but not too much at one time.

Can you see your muscles grow? How do you know they have grown this year? They are larger than they were a year ago.

Ask several children to do something and tell what muscles they have used.

THINGS TO REMEMBER

We need strong muscles.

We can make our muscles strong.

Muscles need good food, exercise and rest.

We should not use our muscles too long at one time.

HOW MUSCLES MAY BE WEAKENED

Can you do harder work this year than you could last year? This shows that your muscles are stronger.

We have learned what the muscles need.

There are some things that will weaken the muscles.

Men often train dogs to perform tricks in a circus. Would a man keep a dog jumping over a bar very long at one time? Why not?

The man knows it would tire the dog's muscles too much. Would he give him poor food? Would he give him too much or too little?

Would he give him any drink containing alcohol? Alcohol would weaken the dog's muscles. The dog does not know this, but he knows that such drinks are not good for him and will not take them if offered him.

Beer and other drinks that have alcohol in them sometimes make people fat, but they never make any one strong.

Tea and coffee are not good muscle builders.

Tobacco weakens muscles and makes a boy lazy.

Men who hire errand boys do not want those with weak muscles.

Call the children's attention to well developed people and arouse the desire to make every part

of their own bodies **equally strong, healthy, and beautiful.**

Point out the opportunities for physical culture for which no other apparatus is needed than the child's own games and plays and daily tasks.

Show pictures of famous statues, if attainable. (Allow the children to "play statue." At a given signal they take a pose, hold it a few seconds, walk a few steps, take a second pose, and so on.)

Draw from the children these

THINGS TO REMEMBER

Tea and coffee do not give children strong muscles.

Drinks that have alcohol in them weaken muscles.

Tobacco weakens muscles.

AUTHORITATIVE QUOTATIONS

ALCOHOL A HINDRANCE TO WORK

School children can not work properly if they have had alcohol, even in very small quantities.—G. SIMS WOODHEAD, M. D., F. R. S. E., Univ. of Cambridge.

Contrary to the popular opinion, heavy work is not made easier by alcohol. When alcohol is added to the fatigue products of the muscle, the depressing effect is very marked. The laborer who earns his livelihood by the exertion of his muscles destroys the source of his strength most effectually by the use of alcohol.—EMIL KRAEPELIN, M. D.

For all purposes of sustained, enduring, fruitful work, it is my experience that alcohol does not help but hinders it. I am bound to say that for all honest work alcohol never helps a human soul.—SIR ANDREW CLARK, M. D.

STRONG DRINK DOES NOT MAKE STRONG MEN

Strong drink does not make strong men. Eschew alcohol if you would enjoy perfect health. Even in moderation it is an evil. It is the fruitful cause of disease.—*The Medical Temperance Review.*

TOBACCO INJURIOUS TO THE MUSCLES

When athletes are trying to become as strong as possible, it is usual for them to do without alcohol and tobacco. This proves that the use of either alcohol or tobacco is considered injurious to the muscles,—ANDREW EADIE, M. D., Professor of Physiology, Ontario Med. Col. for Women.

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THE CHRISTMAS ROAD

By a beautiful road our Christmas comes,
A road full twelve months long;
And every mile is as warm as a smile,
And every hour is a song.

Flower, and flake, and cloud and sun,
And the winds that riot and sigh,
Have their work to do ere the dreams come true,
And Christmas glows in the sky.—G. C. C.

WHERE ARE THE FUTURE MAJORITIES

BY REV. E. O. TAYLOR

Author and Lecturer on
Temperance Teachings in Science.

WHERE are the future majorities?
The following facts will suggest the answer to this question:

1. It is a fact that the present trend of the temperance movement throughout the civilized world is reverting from premature, sporadic efforts back to careful, patient, educational methods.

2. That the efficiency and permanency of prohibitory legislation have ever been dependent upon the education of the voting majorities as to the nature and effects of alcoholic liquors.

3. That, therefore, the education of these voting majorities becomes at once a matter of momentous importance.

4. That in this country these majorities are in the public schoolrooms of today, where they can be reached and influenced adequately under our temperance education laws.

5. That according to the report for 1899 of Dr. W. T. Harris, National Commissioner of Education, the average time during which children in this country remain in the public schools does not take them quite through the fifth school year.

The answer, therefore, to the above question is plainly this:

The future majorities which are to be educated and thus charged with the responsibility of voting out the saloon and of enforcing prohibitory laws are to be found in the first five grades of the public schools of today.

The inexorable logic of these facts makes it clearly evident that the teaching of temperance physiology and hygiene should be as painstaking, thorough, and systematic as possible during the first five school years. To omit, or skim over this teaching during this time period is by no means a question of *method*, but one of yielding a strategic position—an irrational, egregious blunder.

Nothing less than graded, progressive, oral instruction with a text-book in the hand of the teacher during the first three years, and graded, progressive lessons with text-books in the hands of both teacher and pupils for the fourth and fifth years can be consistently tolerated in the light of these facts.

Unyielding insistence must be used in requiring a text-book, properly graded, in the hand of the teacher during the *oral period* to prevent waste of time, teaching errors, unnecessary repetition, and to secure progressive results; and it is only in keeping with the proper rank of this study that a text-book should be given to the child at the same time that he is given text-books in other branches.

Increased emphasis is placed upon the infallibility of these views by two important considerations:

First, the ranking importance now being given to temperance physiology and hygiene by leading educators and physicians, as recently voiced by Sir Victor Horsley, of London. He says, "The English physicians ask that this study shall rank third in importance in the schools of the United Kingdom, language first, arithmetic second, hygiene and temperance third."

Second, the liquor advocates in every country where temperance instruction is mandatory have learned to regard the lower grades as strategic ground and are consequently active in moulding sentiment opposed to any *effective* teaching on this subject in those grades.

The logic of the situation, therefore, and the line of battle thus drawn today, should make it perfectly clear to every educator, legislator, and other intelligent, well-meaning citizen, that to oppose or to deal slightly with the systematic teaching of this subject in the lower grades is not only constructively criminal, but is to place one's self on the enemy's side of the battle line in the crucial hour of this great conflict.



Grammar Lessons

FOURTH
YEAR

THE CIRCULATION OF THE BLOOD

AN earnest, conscientious teacher once asked the editor of this JOURNAL what she could do to induce her boys to stop smoking cigarettes. "I have preached and preached," she said, "and it does no good."

"Do not preach any more, but teach," was the reply.

"But how shall I do it?"

"In the morning write this question on the blackboard, 'How can bread, potatoes, and meat become part of a boy?' Then, in your most interesting way, develop the subject of digestion, showing how the food is broken up and carried to all parts of the body.

"Go carefully over the processes by which the heart, arteries and veins act, and the work of the blood, but say nothing about cigarettes.

"Then write on the board the question, 'What does the pure air you breathe do in the body', and develop the subject of respiration, bringing out the process by which the blood is freed from impurities in the lungs and the need of pure air to make pure blood."

After a few weeks of such teaching, the pupils unanimously declared that they liked physiology, one declaring that it was more fun than a wind-mill."

The next work was to show the probable result of eating improper food or of breathing impure air, including that poisoned by tobacco smoke, and the injurious effects of nicotine on the different organs of the body, especially in the case of boys.

The result, as might be expected, was that the boys who had been unmoved by preaching voluntarily gave up the use of cigarettes on becoming convinced by physiological facts that by such use they were spoiling the wonderful mechanism of their bodies and impairing their future usefulness and money-earning power.

The lessons developed each month in the JOURNAL are designed to aid all teachers who

have tried in vain the preaching method in temperance physiology, and who want to know how to teach the subject in such a way as to interest and convince their pupils.

DESCRIPTION OF THE BLOOD

Get fresh stems of milkweed, if possible, and other plants from which the sap will run when the stems are broken.

By questioning, bring out the fact that this sap is the life juice of the plant, that all plants have it, and that this is what makes the plants and trees live and grow larger.

Ask the children what happens when they cut or prick the hand or any part of the body? Does blood come out when hair and nails are cut? Why not? Where is the blood?

What color are the lips and cheeks? What makes them red?

Compare the color of the blood with that of the sap from different plants, *e. g.*, that of the maple tree, milkweed, bloodroot.

The blood in our bodies is a clear fluid like water, but in it are so many tiny red particles that it looks red. Illustrate by nearly filling a bottle with red sand and then pouring in water.

WORK OF THE BLOOD

When this lesson is given in country schools, ask the children what their fathers raise on their farms. Do they need all this produce for their own use? What do they do with what they do not need?

In city classes, get the children to tell where the food comes from that appears on their tables. Trace the sources back to the farm.

Can potatoes, meats and grains be raised in the city? How does such food reach the people who live there?

What do we eat?

What parts of our bodies need food?

How does the food we eat get from the stomach to every part of the body?

The blood is the food-carrier of the body, just as cars, and boats, and wagons are the food-carriers of a country.

The stomach needs a part of the food that goes to it, but it can not use it all. Every part of the body must have its share.

This is one reason why the blood is always in motion, to carry food to every part, the bones and muscles, and skin and brain, and all the organs of the body.

How do you feel after you have been running or playing hard?

We feel tired after exercise, because our work or play has worn out parts of the body faster than they could grow again.

What is done with things that are worn out?

We do not leave worn-out clothes lying around the house; neither would it be safe for worn-out particles of the body to remain in the flesh and blood house we live in.

How do we get rid of the waste from our bodies?

Every time we breathe we throw off some of it. How does this waste matter get to the lungs from our fingers and toes and every part of our bodies?

The same busy carrier that brings food to every part carries away waste. What is its name?

Tell again the two kinds of work that the blood does.

ORGANS OF CIRCULATION

Show a chart of the circulation system of the body at this point in the lesson. A black-board drawing in colored chalk will answer if no chart is available.

Draw a circle on the board. Ask the children what a circle is. Let them look up the word in their dictionaries if necessary.

What do we mean by the circulation of the blood?

Where does the blood start on its way around the body?

What makes it move? Why does it never stop?

Have the children open their physiologies at this point and read aloud in turn the story of the circulation of the blood.

Then call on different ones to trace its course from the heart to all parts of the body, back to the heart; then from the heart to the lungs and back.

What is the name of the pipes that bring the blood back to the heart?

What is the name of the pipes that carry the blood from the heart to different parts of the body?

What is the difference in color between the arteries and veins? Let the class find from

their books the reason for the darker color of the veins.

How does the food for all parts of the body get out of the veins? How does waste matter from all parts of the body get into the veins?

Have the simple description of this process that is given in books for this grade read aloud by one or more children. Amplify this description as may be necessary until all understand it, and know that the blood-vessels divide and subdivide until they are as small as the tiniest veins in a leaf.

The walls of these tiny blood-vessels are so thin that food particles can easily pass out through them and waste particles pass in.



"The years may enter not her shrine;
Forever fair and young is she,
The mother of our Lord."

Bring a basin of water into the class and a bulb syringe.

Put the syringe into the water. The water remains still as before. It does not move.

Now press the bulb. This makes the water flow through the rubber tube. Let some of the children try this experiment. Then tell them that the heart works in something the same way.

It is made of muscle, and can squeeze itself together to send the blood to all parts of the body, and then relax to let

the blood flow back into itself.

Show a cloth or paper model of the heart. How large is it?

How does it look on the outside? on the inside?

Let the child who has seen a chicken's heart tell about it.

Let the class draw a heart, showing the four chambers, the thick walls, and the large arteries and veins that enter and leave it.

Are there any doors between the right side of the heart and the left? between the upper and lower rooms?

Show the class how to find from their books the reason for each of these openings.

NEEDS OF THE BLOOD

If the blood feeds all parts of the body, what kind of food should we give it to carry to every part?

Let the class name foods that they think will nourish the body. Write a list of the best and most easily obtainable foods on the board.

There are other foods that are not good for the blood. What are some of these foods? Show the class how to find from their books why very rich food, fried meats and vegetables, much candy, cake, pastry, pickles, spices, unripe or overripe fruit, etc. are bad for the blood.

There are other things that people sometimes eat or drink that are not food at all. Who can name some of these things?

No drink that has alcohol in it is a true food.

Tobacco is not a food.

Besides not being foods, drinks that contain alcohol, and tobacco may hurt the body in many ways. This is because there is a poison in each.

Show the children how to find from their books what this poison is in each case, and some of the ways in which alcohol and nicotine hurt the body.

How can you tell when every part of your body is getting the kind of food it needs, and enough of it?

When you are getting just enough of the right kind of food, and nothing happens to make you ill, you will grow taller and stronger, you will weigh more, you will feel well, you will have a fresh clear skin, you will sleep well at night, and be ready to get up early in the morning.

People who do not have the right kind of food, or who use drinks that contain alcohol, or those who use tobacco are very likely to show it in some way.

The blood does not have enough good food to carry to the skin, and the face and other parts of the body are often covered with pimples and blotches. The hands of the cigarette smoker are stained brown and yellow.

Such a person is not pleasant to look at, and he often does not feel well.

Get from the children in conclusion such statements as these for the blackboard:

We must use only good food to make good blood.

Poor blood will not feed the body.

Alcohol and tobacco are bad for the blood.

We need pure air at night as well as in the daytime to keep the blood pure.

AUTHORITATIVE QUOTATIONS

HOW TO KEEP WELL

No disease can exist where there is an abundance of pure blood. To get the necessary

amount, eat nutritious food, to circulate it perfectly, take proper exercise; to purify it, get fresh air and sunshine.—*Dietetic and Hygienic Gazette*, Feb., 1905.

NO STRENGTH IN ALCOHOL

There is an old prejudice, firmly rooted and almost impossible to destroy, that alcohol has a strengthening action, and that in consequence it is necessary to give it to debilitated persons, to children as well as adults, because alcohol is "healthful." Not only is this not true, but this belief constitutes a gross error which has most disastrous consequences. Strength is not given except by nourishment. To whom will ever come the idea that feeble children should smoke tobacco? And yet, whoever gives them alcohol, under whatever form and in whatever dose, acts just as foolishly.—DR. WORMER, in the *Temperance Record*, Apr., 1905.

ALCOHOL NOT A FOOD BUT A POISON

Alcohol can never be nourishing, but is invariably poisonous. A poison destroys the vital parts of the body, while a nourishing substance keeps them in strength and repairs waste. This poisonous substance [alcohol], besides its intoxicating effect, works the greatest harm in all the principal organs of the body, in the kidneys, the liver, the muscles of the heart, the veins, the brain, the nerves, etc., and thousands of persons fall victims to this poison every year.—MAX KASSOWITZ, M. D., Univ. of Vienna.

ALCOHOL A DISEASE-PRODUCER

Alcohol is no true food, for it tends to curtail life and to produce a host of diseases. Diseases of the heart and lungs, caused by drinking beer and spirits, are extremely prevalent, and carry off great hosts of patients. If it were a food, it would certainly be a most poisonous food to produce such curtailment of the lives of its votaries, even when using it moderately.—CHARLES R. DRYSDALE, M. D., Metropolitan Hospital, London.

TOBACCO A MENACE TO THE HEART'S ACTION

Tobacco is a poison to the motor nerves; it actually diminishes the power of the respiratory muscles; it diminishes the force of the heart's action; besides, it renders the latter irritable, easily excited and unable to respond to sudden emergencies, thereby disturbing and interfering with the normal circulation of the blood, and thus cutting off the tissues from their normal supply of even the nicotinized product of the habitual smoker. It is a nerve poison, but its action upon the nerve tissue is exerted through the medium of the blood-vessels.—C. J. ALDRICH, M. D., Cleveland College of Physicians and Surgeons.

A CHRISTMAS CAROL

BY PHILLIPS BROOKS

Everywhere, everywhere, Christmas to-night !
 Christmas in lands of the fir-tree and pine,
 Christmas in lands of the palm-tree and vine,
 Christmas where snow-peaks stand solemn and
 white,
 Christmas where corn fields lie sunny and
 bright.
 Everywhere, everywhere, Christmas to-night !

II

Christmas where children are hopeful and gay,
 Christmas where old men are patient and gray,
 Christmas where peace, like a dove in its flight,
 Broods o'er brave men in
 the thick of the fight.
 Everywhere, everywhere,
 Christmas to night !

III

For the Christ-child who
 comes is the Master of
 all,
 No palace too great and no
 cottage too small,
 The angels who welcome
 him sing from the
 height :
 "In the City of David, a
 King in His might."
 Everywhere, everywhere,
 Christmas to-night !

IV

Then let every heart keep
 its Christmas within,
 Christ's pity for sorrow,
 Christ's hatred of sin,
 Christ's care for the weakest,
 Christ's courage for
 right,
 Christ's dread of the dark-
 ness, Christ's love of
 the light.

Everywhere, everywhere, Christmas to-night !

V

So the stars of the midnight which compass us
 round
 Shall see a strange glory, and hear a sweet sound,
 And cry : "Look ! the earth is a flame with
 delight,
 O, sons of the morning, rejoice at the sight."
 Everywhere, everywhere, Christmas to-night !

While Thanksgiving has its foundation on
 Plymouth Rock, Christmas rests upon the Rock
 of Ages.—CHARLES DUDLEY WARNER.

*Courtesy of the Missouri Pacific Railroad.

A LIQUOR-DEALER'S TESTIMONY

BY ROBERT H. MAGWOOD

AT a hearing before the Boston Police Board several years ago a liquor dealer sought to have his license transferred from the city to the suburbs.

His counsel said in substance, "The liquor dealer today finds himself the victim of many rules and conditions which go to rob him of his profit. The abutter first imposes an objection, then he may sell only certain hours, and on all legal holidays he is prohibited; he may not sell to certain persons or under certain conditions; and then, having complied with all the legal conditions, he finds, particularly among young Irishmen, large and growing total abstinence societies whose members positively shun his business, until he is compelled to seek new quarters or see his business gradually wiped out."

We are glad saloon representatives are ready to concede that a growing habit of abstinence from drink threatens the continuance of the saloon.

Millions of people not educated to our abstinence ideas seek our shores, continually helping to sustain an environment hostile to temperance sentiment.

Nevertheless, among our young people the idea is growing that total abstinence from alcoholic drinks is the only safe way.

The impartial student will at once concede that the training in our public schools is the great factor

which produces the desired result, and that knowledge acquired in the study of physiology and hygiene means intelligent opposition to the use of either alcohol or narcotics.

A STAR

BY CLINTON SCOLLARD

Now that the year is rounding to its close,
 And heaven sows with stars the fields of night,
 Blossoms that burn with pale auroral rose,
 With delicate emerald or with radiant white—

Down all the shadowy night-time of the past
 One planet gleams resplendent over them,
 Its glorious light o'er the whole world cast,
 The star that's beacon'd above Bethlehem !



"In the cross of Christ I glory!
 Towering o'er the wrecks of time!"

BOOK NOTICES

A CENTURY OF DRINK REFORM IN THE UNITED STATES, by August F. Fehlandt. Jennings & Graham, Cincinnati. Price \$1.50.

The purpose of this book is twofold, to present in outline a clear, concise history of man's struggle with his appetite for strong drink, and to indicate some of the most hopeful methods by which a successful outcome of his struggle is to be reached. The author, in our opinion, has come nearer attaining his first object than his second. The prevalent drinking customs of society a hundred years ago, the first strong notes of protest from individuals and societies, in the beginning for moderation and later for abstinence, the formation and growth of temperance organizations, the history of prohibition and the causes of its alleged failures, the connection of this movement with party politics, the concerted hostility of the liquor traffic, the local option principle, are all clearly sketched in popular language. The author, too, realizes that only votes cast for this specific issue in sufficient numbers will abolish the saloon; but he fails to point out with equal clearness the fact that these votes can be secured only when a majority of the voters want the saloon abolished, and that this must come about by teaching them when children in our public schools the real nature of the drinks sold by the saloon and the effect of these drinks on the physical, mental, and moral nature. A strong word as to the urgent need of thorough enforcement of the temperance education law now on the statute books of every state in the Union would have added immeasurably to the practicable value of the book.

TEMPERANCE PROGRESS IN THE CENTURY, by John G. Woolley, M. A., and William E. Johnson. The Linscott Publishing Co., London and Philadelphia. Price \$2.00.

While many of the topics elaborated in this very interesting book are the same as in "A Century of Drink Reform" noted above, it covers a wider field, tracing as it does the progress of temperance in other countries as well as the United States. The Gothenburg and Dispensary systems are fully described, a chapter is devoted to temperance and medicine, and another to temperance and life insurance. The canteen question is elucidated and the relation of temperance to industry convincingly shown. A feature of the book is the revelations it makes of the methods by which liquor men influence legislation and hoodwink the temperance and religious elements of a community into siding with them whenever this question is brought to the polls. In this book, too, the

importance of educating the children and young people in the physiological reasons for total abstinence is not emphasized so strongly as could be wished. In the opinion of the authors, the church is the hope of the temperance reform of the future, but it will be a forlorn hope unless Christian people as well as others are taught before appetite is formed that alcohol is always a narcotic poison with the power to create a craving for itself that can not be resisted.

THE INDUSTRIAL HISTORY OF THE UNITED STATES, by Katharine Coman, Ph. B. The Macmillan Co., New York and London. Price \$1.25.

It is a relief to turn over the pages of a school history that does not give first place to battles and bloodshed. The record of our industrial progress is far more important to the youthful student, and in this book it is given with simplicity and yet with full reference to authorities. The arrangement is such that it is equally well adapted to the needs of classes that can devote but a limited time to the subject, and to those able to study each topic in detail. The illustrative readings are selected for the interest which they will arouse in the work no less than for their scientific value, a feature which should commend itself to other authors. The marginal references are valuable and the illustrations good. The type is the poorest feature of the book, and minimizes to a degree its otherwise attractive appearance.

WORLD ORGANIZATION, by Raymond L. Bridgman. Ginn & Co., Boston. Price 50 cents.

In part, a reprint of articles which have appeared recently in some of the leading magazines, showing that the essential unity of mankind points to a similar unity of organization, and indicating the salient features of such organization. The chief objections are answered, and the advantages which would ensue to strong as well as weak powers are shown, together with the improved condition of society. The author outlines the steps already taken to bring about this eminently desirable state of affairs, noting especially the work of the Hague conferences.

PHYSIOLOGY TOPICS FOR DECEMBER

PRIMARY—Cider, Wine, Beer; Effects of Each. Cigarettes. Sense of Sight; Use of Eyes, Care, Training. Growth; Need of Exercise and Sleep.

INTERMEDIATE—Circulation of Blood; Heart, Veins, Arteries, Capillaries, Pulse. Skin; Layers, Functions, Care.

ADVANCED—Excretion; Necessity for, Excretory Organs. Need of Outdoor Life. Special Senses; Experiments.

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School Physiology Journal

Vol. XV

BOSTON, JANUARY, 1906

No. 5

JANUARY

BY JESSIE DAVIS

I'M little January ;
Perhaps you do not know
How far I've come to greet you,
Across the fields of snow.
Perhaps you weren't expecting
I'd be so very small ;
Perhaps you're almost wishing
I hadn't come at all.
I've several little brothers,
And little sisters, too ;
And every one is coming
To make a call on you.
But I got ready quickly,
And came right straight off here,
To be the first to greet you,
This happy, glad new year !

A MEDICAL STUDY OF THE EFFECTS OF ALCOHOL ON SCHOOL CHILDREN

BY T. A. MACNICHOLL, M. D.

Vice-President of the American Medical Association for
the Study of Alcohol and Inebriety, New York City, N. Y.

IN a study of the relation of heredity to the mental deficiency of children, undertaken in 1901 for the New York Academy of Medicine, I was forcibly impressed with the conspicuous position occupied by alcohol. A more extensive study verifies the facts then presented and gives added emphasis to alcohol as an etiological factor in mental deficiency.

This subsequent investigation included 55,000 school children—10,790 females, 44,210 males; 17,422 of foreign parentage, 37,578 of American parentage.

These children represented 143 schools and 1,572 classes in New York, New Jersey, New Hampshire and Connecticut; 10,800 from country schools, 44,200 from city schools. Of this latter number, 13,000 are from cities of less than 50,000 population.

The conservatism of many school officials, together with the numerous duties of school teachers made it impossible to secure an exhaustive, consecutive, and comparative study of city and country schools; however, the facts secured are sufficient, and the field covered comprehensive enough to reveal the relative importance of the underlying causes of mental torpor.

The 55,000 children, classified according to their standing in studies, appear as follows:

standard, 42 per cent; below standard, 16 per cent; dullards, 17 per cent; very deficient, 25 per cent. Direct causes of dullness reported: personal habits, 9 per cent; environment, 11 per cent; heredity, 65 per cent; sickness, less than 1-300 of 1 per cent.

Comparing city and country schools we find a preponderance of deficient in the city. Country schools: dullards, 15 per cent; very deficient, 7 per cent; a total of deficient in country schools of 22 per cent. City schools: dullards, 17 per cent plus; very deficient, 29 per cent plus; a total of deficient in city schools of 46 per cent.

The causes contributing to dullness in country towns are less conspicuous and glaring than those which obtain in more crowded and metropolitan centers. Those that do exist find partial compensation in more congenial environment and healthful activities.

The city, with its multitudinous avenues for advancement, affords unbounded opportunities for the concentration and operation of those retrograde forces which reduce the vitality and capability of children.

In city schools, the children of foreigners make a large percentage of the deficient, but their dullness is directly traceable to causes other than racial. All things being equal, the children of the native present no superiority over those of the foreigner. As an instance, a class of 50, in which 90 per cent of the children had an American ancestry of five generations, but with hereditary alcoholic taint, reported 80 per cent dullards.

The personal attitude to alcoholic drinks, including beer, wine and spirits, is reported in 34,000 cases, viz.: abstainers, 73 per cent; drinkers of beer, 23 per cent; drinkers of spirits, including wines, 4 per cent; drinkers of beer and spirits, 12 per cent.

The parental attitude to alcoholic drinks is reported in 20,147 cases: children of drinking parents, 6,624; children of abstaining parents, 13,523. Children of drinking parents, 6,624; dullards, 53 per cent; children of abstaining parents reported dullards, 10 per cent.

The close correspondence between the drinking habits of the parent and the mental deficiency of the child can not be mere accident.

Heredity is a very important etiological factor in mental deficiency and can not be ignored in its bearing upon treatment.

In dealing with mental deficient, we are prone to mistake some symptom for the cause

and in our efforts to remove the manifestations of disease we conceal the main disorder.

It is well for us to recognize that organic disease, tendency to eye strain, deafness, various neurotic manifestations, and dullness, each may be the sequel of an alcoholic history. These results should not be mistaken for the primary cause of the disturbance.

One causative factor of dullness which should command close attention is the prevailing drinking habit among children. A few special instances may be noted: four classes, having a total of 184 pupils ranging from eight to eleven years of age, were reported as "unusually dull," but 16 reaching the standard in study. Investigation revealed the following facts: one hundred drinkers of beer, 9 drinkers of spirits, 51 drinkers of beer and spirits—a total of 160 drinkers (about 87 per cent), 57 of whom drank "liquors" regularly with their meals.

In a class of 60 boys, of whom 40 are drinkers of beer and spirits, it is no uncommon experience to have one or more stagger into the schoolroom, drunk.

These juvenile drinking habits are not wholly confined to metropolitan schools. In a town of 6,000 inhabitants, 10 children under 12 years of age were found on two occasions in a helpless state of intoxication.

In a village school of 186 pupils, 30 are occasional drinkers of beer and spirits. When searching for two absentees, boys under 12 years of age, the truant officer found them lying drunk under a shed.

A boy of eight years came into the classroom in great distress. On inquiry the teacher found he had taken a quantity of pure alcohol to quench a thirst that beer would not satisfy.

The dangers and temptations from drink are not confined to the child's home.

One teacher reports that a boy of nine came into school drunk. He was induced to confess where he had secured his drink. Taking a card from his pocket, he said, "This is my beer card," and explained that a hole was punched in the card every time he got a drink of beer, and that whoever got the most holes in his card in a month got a prize. A large number of the 55 boys in the class acknowledged that they had cards like it, and often bought beer so as to get holes in their cards.

Numerous instances are reported of children acquiring the appetite for strong drink through patronizing the free lunch in a bar room.

In a number of saloons, rooms are fitted up with small furniture, picture-books, toys, and hobby-horses, and into which children are enticed to play. The taste for liquor is surreptitiously cultivated, until the habit is securely fastened. Two boys, sons of a highly respected

and honored citizen, were thus inveigled into drink and in a brief period sank into the depths of the wildest debauchery.

The immediate causes of dullness dependent upon a vicious environment, habit, etc., are not so easily overlooked as those more subtle, yet none the less potent causes which, through heredity, have become implanted in the fundamental structures. Family history is of inestimable value to a clear recognition of the primary causes of dullness.

The following is a summary of the family histories of 3,711 children of 1,100 different families traced through three generations: 1,871 males, 1,840 females; 19 precocious in one or more studies, 421 excellent, 981 fair, 2,290 dullards. The personal attitude to drink: 66 per cent abstainers, 28 per cent beer drinkers, 6 per cent whiskey drinkers, 14 per cent beer and spirit drinkers. Family history in relation to drink: 2,713 had drinking parents, 2,771 had drinking parents and grandparents, 998 had abstaining parents, 757 had abstaining parents and grandparents.

Of the children of drinking parents but abstaining grandparents, 73 per cent were dullards. Of the children of abstaining parents but drinking grandparents, 78 per cent were dullards. Of the children of abstaining parents and abstaining grandparents, 4 per cent were dullards.

Dividing the 3,711 children into two classes, viz., those free from hereditary alcoholic taint and those with hereditary alcoholic taint, we note some very striking contrasts:

1. Those free from hereditary alcoholic taint: 96 per cent were proficient, 4 per cent were dullards, 18 per cent suffered from some neurosis or organic disease.

2. Those with hereditary alcoholic taint: 23 per cent were proficient, 77 per cent were dullards, 30 per cent very deficient, 76 per cent suffered from some neurosis or organic disease.

From these studies we conclude:

1. Alcohol at the threshold of life is a bar to success and a foe to health.

2. Alcohol, by destroying the integrity of nerve structures, lowering the standard of organic relations, launches hereditary influences which by continuous transmission gain momentum and potency and leave their impact upon gland and nerve until mental faculties are demoralized, physical energies hopelessly impaired, and moral nature becomes degenerate and dies.

3. If we are to make any material change in the ranks of mental deficient we must adopt methods of prevention as well as methods of cure.

It is a momentous problem that confronts us. The spirit in which we meet it may be a possible aid or hindrance to its solution.—*New England Medical Monthly*.



Primary Lessons

FIRST YEAR

THE SPECIAL SENSES

DURING the year 1905, a careful physical examination of almost 14,000 children has been made in the city of New York. The results showed that of these 14,000 children 3,219 had defective vision, and 460 defective hearing.

In almost every instance the truth was not suspected and nothing had been done for the children. They had been considered as stupid or mentally defective.

Every teacher ought to be on the lookout for cases of this sort. A few simple tests will usually bring out the facts. If there is any sign of weakness the child's parents should be notified and a physician consulted.

NUMBER AND NAMES OF THE SENSES

What color is this flower?

How do you know that the rose is red?

How do you know that the bird sings sweetly?

How do you know that the violet has a pleasant odor?

How do you know that the pickle is sour?

How do you know that the stove is hot?

We call these means of finding out things, the senses.

How many senses are there?

Is there any other way that we find out about things?

Name all the five senses.

SIGHT

With what do we see?

Name as many different parts of the eye as you can.

Outside, there are lids and lashes.

Under the lid is the eye-ball.

Notice the little dark spot in the middle of the eye.

This is the pupil through which we see.

THE EYE

What is the use of the eyelid?

How do you shut your eyes?

When the lid is down over the eye, can you see?

Why are the lids down when we sleep?

What is the use of the eyelashes?

What prevents drops of perspiration from running off the forehead into the eye?

The eye must be kept moist all the time.

When we cry there is more water in the eyes than we can take care of. What becomes of it then?

We call this water, tears.

How many of you have had your pictures taken?

What is the name of the box which the photographer uses to take the picture?

Each of our eyes is a little picture-making machine like the camera of the photographer.

The picture goes into our eyes through the little dark pupil.

(Let each child look for the pupil in his neighbor's eye.)

We call this seeing.

CARE OF THE EYES

Our eyes are so very delicate and wonderful, we must take good care of them. If once they are injured, we can not get new ones.

When you read, or use your eyes for work, you need good light.

When must you never try to read?

In the twilight.

It will hurt your eyes, if you read with the bright sunlight falling on the book.

What position should you take to read?

You should never read while lying down.

When the eyes are tired, what ought you not to do? You ought not to use them then, because they need rest.

You ought not to rub your eyes. If they feel badly you may bathe them in warm salt water or milk and water.

If you have any trouble in seeing, you ought to go at once to a doctor.

SENTENCES

We have five senses.

They are sight, hearing, touch, taste, smell.

We see with our eyes.

We must take good care of our eyes.

HEARING

When some one calls you, how do you know it?

What do you hear with?

Where are your ears?

SHAPE AND PARTS OF THE EAR

What is the shape of the outside part of the ear?

It is something the shape of a shell.

What other part is there to the ear besides the broad curved part on the outside? The tube which goes into the head.

Why is the outer part of the ear so broad?

To gather up the sounds and send them through the little tubes.

Our ears are almost as delicate and wonderful as our eyes.

If we injure them, we become deaf. Then we can not hear any of the sweet sounds in the world.

We must be careful never to put anything into our ears.

CARE OF THE EARS

The outside should be washed with a soft cloth and warm water.

In very cold weather the ears should be covered when you go outdoors.

You must be very careful never to pull the ears, or strike any one on the ears, because it might make him deaf.

SENTENCES

We hear with our ears.

It is pleasant to hear music.

We should never put anything in the ear.

Be careful not to strike the ear.

TOUCH

When you are near a stove how do you know whether or not there is a fire in it? Where do you feel the heat?

All over the body, just under the skin, are little nerves with which we feel.

The nerves find out about things outside our bodies and carry the message to the brain. This is feeling.

What can we feel besides heat? Cold.

WHAT WE LEARN THROUGH TOUCH

Press your finger on your desk. How does the desk feel? Tell of something else that is hard.

How do mud and dough feel? Name something else that is soft.

Rub your hand along the top of your desk. Is it smooth?

Name something else that is smooth. Something that is not smooth.

What do we call things that are not smooth?

Touch different parts of your hand with your pencil. With what part do you feel best?

There are more nerves in the tips of the fingers than anywhere else on the hand.

The lips and tongue have many nerves. They can feel well and quickly.

When we touch something too hot, or hit

something very hard, how does it feel? It hurts.

That is the way our nerves tell us when we are injuring ourselves.

What do we call it when our nerves tell us this? Pain.

Pain is a good friend, for it says, "Look out. There is trouble at this spot."

If it were not for pain, we might get hurt without knowing it.

SENTENCES

Fire feels hot.

Snow feels cold.

Iron is hard to the touch.

Window-glass is smooth.

TASTE

If I should give you a piece of sugar, what would you do with it? Why?

What is it that we taste with?

How does sugar taste? Can you name anything else which tastes sweet?

How does vinegar taste? What else tastes sour?

How does medicine sometimes taste? Can you think of anything else which is bitter?

How does dried fish or dried beef taste? Do you know of anything else that tastes salt?

In order to taste a thing it must melt or dissolve in the mouth. Then the tiny nerves of the tongue tell us about it, and we know we have in the mouth something which is sweet or sour, salt or bitter.

If it were not for the sense of taste we should not enjoy eating.

But just because a certain kind of food tastes good, you should not eat too much of it. Too much sweet, as for instance, candy, is not good for you.

Even if you do not care very much about the taste of some food, if it is good, you should try to eat a little of it. It may be that you can learn to like it.

SMELL

If your eyes were shut tight, and I should bring a bunch of violets near you, would you know they were there? How?

Where is your sense of smell?

Can you name some pleasant odors? Some unpleasant ones?

The sense of smell is very useful to us, because it warns us of bad things, often more quickly than our eyes or ears can.

Whenever you are in a place which smells bad, the best thing to do is to go away.

Food that smells bad is not good to eat.

Do you know of any animal whose sense of smell is stronger than ours?

I will tell you the story of a dog who could smell much better than we can.

CLARENCE AND BOB

Once on a time there was a little boy named Clarence, who had a big Newfoundland dog. Wherever Clarence went, Bob (for that was the dog's name) went too.

Clarence's mother would say as they started out to play, "Now Bob, look out for Clarence. See that he doesn't get hurt, and bring him back safely."

Bob would look up in her face and wag his tail. He knew what she was saying, and tried his best to answer her.

How well he minded! One day Clarence was playing on the bank of the river. Suddenly he slipped and fell in.

He would have drowned, but Bob, who had heard his scream, came rushing down the bank, jumped into the water, and caught Clarence's coat in his mouth.

He swam back to shore, and somehow managed to drag the little fellow out and lay him on the grass.

Then he ran home, rushed up to Clarence's mother, and began pulling her skirt and barking.

She followed him, wondering what was the matter, and Bob led her to where Clarence lay on the grass. If it had not been for Bob's

bravery, Clarence would have lost his life.

One day Bob went to town with Clarence's father, and Clarence was left to play alone.

He played near the house for awhile, but about four o'clock his mother missed him.

She called, but no answer. She looked everywhere—no Clarence could she find.

Of course, she was very much frightened. She called all the neighbors and they searched through the woods and along the river, but there was not the least trace of the missing boy. The poor mother was almost frantic by the time Clarence's father came home.

She told him how they had searched everywhere,—the fields, the woods, the river, and they were sure that some dreadful thing had happened to the little boy.

The father looked very anxious for a moment, then he whistled for Bob.

When the dog came running up he said to him, "Bob, find Clarence."

Bob wagged his tail and put his nose to the ground. He ran about snuffing for a few moments. Then he went into the house and straight to the parlor.

There, all curled up in father's big chair, they found the little boy asleep.

Bob uttered a short, joyful bark, as if to say, "Here he is."

You may be sure that Clarence's mother and father were happy. How they laughed and cried together over Clarence and the dog!

You see the dog has such a keen sense of smell that Bob was able to scent Clarence, as he lay asleep. Dogs often follow a scent for miles.



"There was the little boy fast asleep."

SENTENCES

We taste with the tongue.

We can taste sweet, sour, salt and bitter.

We smell with the nose.

A dog's sense of smell is keen.

EFFECT OF ALCOHOL AND TOBACCO ON THE SENSES

All we know about the world comes to us through our senses. If we injure or lose any of these senses, we can not enjoy so much of the beautiful world.

If our sight were dimmed or our ear dulled, we should lose a great deal that might have made us happy.

Shut your eyes a moment.

What do you see? Nothing.

Think of being blind always. Is there anything in the whole world you would take in place of your eyes?

Would you rather not have your hearing than all the money in the world?

We must take care to keep our senses in good working order. A little carelessness or an accident may do them great harm.

There is one way that people often injure their senses. They may not know that they are harming them until it is too late.

If you learn about it now you need never hurt your sight, or hearing, taste, smell, or touch

in this way. It is by the use of alcohol and tobacco.

Alcohol, we have learned, is a poison found in cider, beer, and wine. It is also found in some other drinks.

When you drink any of these liquors, you take some of this poison into your stomachs. From there it may find its way to all parts of your bodies.

Sometimes, when a person drinks these liquors, they hurt his eyes. They make them red and sore.

Sometimes smoking tobacco hurts the eyes, too.

We learned how careful we must be not to hurt our sense of hearing by putting things in the ear, or by striking the side of the head. Alcohol, taken in these drinks we have spoken of, sometimes dulls the hearing.

If a man is in the habit of using drinks which contain alcohol, or of smoking, his senses of taste and smell may be dulled and hurt, and the nerves in his skin may not be able to feel so well or so quickly as they ought.

So you see, every one of the five senses may be harmed by using alcohol, and several of them by tobacco.

There is just one way to be sure that our senses will never be hurt by these things, and that is, by letting both alcohol and tobacco alone.

If we never taste cider, beer, or wine, we shall never learn to like it, and drink too much.

If we never smoke one cigarette, we shall never injure sight, taste, or smell by smoking too many.

The real danger lies in beginning to use such things. Let them alone and you will be safe.

AUTHORITATIVE QUOTATIONS

EFFECTS OF ALCOHOL ON THE SENSES

The perceptive faculties are, to an extent, benumbed, even by quantities of alcohol that most moderate drinkers would think nothing about.—A. A. HILL, L. R. C. P.

Tendency to eye strain may be the sequel of an alcoholic history.—T. A. MACNICHOLL, M. D., New York.

It has been found out that a person can not see or hear so clearly, or act so precisely after he has taken a little alcohol as he could before.—W. S. HALL, M. D., PH. D., Northwestern University.

One of the many effects of nicotine is that of injuring the eyesight through its action on the nerves.—C. H. SHEPARD, M. D., Brooklyn.

CARE OF THE BODY

SECOND YEAR

A MACHINE or tool will not do its work well unless properly cared for. It is far more necessary that we care for our personal tools, upon which our success in life largely depends.

Whenever occasion arises, call attention to the things that make for bodily health and strength, following the affirmative method and telling the children what to do, rather than dwelling, unnecessarily, upon what they are *not* to do. Emphasize the fact that they are builders and the gain to them if they build well.

CARE OF TOOLS

If you had a machine given you that helped you in many ways and could never get another, what kind of care would you give it? Would you put anything on it or into it that would make it less useful?

Ask the children to name a number of tools and tell what must be done in order to keep them in good condition, e.g., ("A saw is a tool, and we need to keep it sharpened.")

What have you ever made or built? Different boys and girls have made different things; but there is one thing all boys and girls are building every day, and it grows larger and larger. What is it?

CARE OF PARTS OF THE BODY

What kind of a body do you need in order to have a good time? In order to work well?

Would a horse have a strong body if no one took care of him? Do you need as strong a body as the horse needs? Why not? Do you need as strong a brain? Why?

How can we help our bodies to grow more and more useful?

You have told me you are building your own bodies day by day. How can you build glossy hair? Clear and strong eyes? A soft, smooth skin?

Finger nails you would be willing to have seen? Teeth that will last a lifetime? A broad, strong chest?

A straight back? Strong legs and arms?

How many of you own a tooth brush? How many of you use it every day?

Do not ask the last two questions if you think pride would tempt any child to tell an untruth in order to gain your approbation. A little quiet missionary work may be done along this line, suggesting ways in which money may be earned to buy a tooth brush. In some cases, it will be better for the teacher to make the purchase for the child.

Tomorrow I shall ask you to place your hands

on your desk so that I can see your finger nails as I pass.*

Would a horse travel well if his shoes were too small? Can your feet grow if your shoes are too small?

Is it healthful to wear rubbers in the house? How do they make your feet feel?

When you have wet your feet what should you do? When you change your shoes and stockings after wetting your feet, be sure to rub your feet till they are warm and dry.

In very cold weather, button your coat.

We will play a child has just arisen in the morning. What shall he do before breakfast in caring for himself? What shall he do before dinner?

If a little girl has been playing in the yard, and her mother asks her to come in and helper what should she do to her hands?

What should she do before supper?

Should we go to bed with soiled hands or feet? What should we do to our teeth?

There are many things we can do for ourselves without troubling mother to do them for us.

THINGS TO REMEMBER

I shall be well and strong if I take good care of my body.

I must keep it clean.

I must keep my feet dry.

I must keep my nails clean.

SOME NEEDS OF THE BODY

While the conditions of life vary greatly among the children of all nations, the problem to be solved remains the same,—the making of a more vigorous and healthful body.

No child, rich or poor, but must have fresh air, wholesome food, and exercise in order to attain this end.

It is said more babies die from overfeeding than underfeeding, a truth not always limited to babydom.

In communities where mothers' meetings are held, much may be done in the right direction. Where the mothers can not be easily reached, we

*Do not forget to do this.

must depend upon the children to make needed reforms in the home, and who shall inspire the children if not the teacher?

Material. Shell of turtle and snail (or picture). Oyster and clam shells.

CLEANLINESS

When you go home from school, how do you like to see the rooms look? Why would you not like to see them disorderly and dirty?

What land animals carry their houses about with them? What sea animals live in one house all the time? (Show the shells if possible. Call attention to the cleanliness of these houses.)

Please show me the house you carry round with you.

FOOD AND DRINK

How can you clean the outside of these houses when they are soiled? What else does the body need? (Question until you get good food and drink.) Please name a few foods that are healthful.

HEALTHFUL AND UNHEALTHFUL DRINKS

What drinks are healthful? What is the best drink to quench thirst? Beer and wine and some other drinks contain something harmful. It is called alcohol.

These drinks do not quench thirst, nor make the body strong. Tea and coffee will not help you to grow. Grown people have harder work to do than children, and may sometimes need tea and coffee. Children never do.

TOBACCO HARMFUL

Will smoking help boys to grow? Some years ago when the men of this country went to war, many of them were wounded. Doctors found out that men who did not drink beer and other harmful drinks got well sooner than those who used them. Doctors have told us that boys who smoke are not so strong as those who do not.

EXERCISE AND REST

Besides food and drink we need exercise to help us grow larger, taller, and stronger. Please



Two illustrations of a well-built body.

think of things you can do that are good exercise. (Caution against excessive exercise.) After we have exercised we need——? (Rest)

We need something besides water, food, drink, exercise and rest. We need air.

NEED OF PURE AIR

I can see several openings in your body houses that let in fresh air. What are they?

Please stand. Breathe in while I count one. Breathe out when I count two. (Count slowly 1-2, 1-2, several times.)

Show the difference between deep and shallow breathing. Rest. Try again, this time raising your arms level with your shoulders while I count 1-2, 1-2.

(Show that in all feats the man who can breathe deeply will be able to do more than one who can not.)

Are your clothes so loose that you have plenty of room to breathe? If they are not, ask your mother to make them larger.

THINGS TO REMEMBER

We need to keep our bodies clean.

We need good food and drink.

We should not put harmful food or drink into our bodies.

We need exercise and rest.

We need to breathe deeply.

AUTHORITATIVE QUOTATIONS

ALCOHOL A POISON TO THE HUMAN BODY

Alcohol in any form, as brandy, wine, or beer, and even in relatively very small amounts, is a poison for the human body.—PROFESSOR FRAENKEL, Halle.

ALCOHOL BLUNTS THE PHYSICAL POWERS

No one can take alcohol without blunting the physical powers of the brain, the muscles, and the nerves.—ADOLF LORENZ, M. D., Vienna.

BEER LIMITS CAPACITY

Beer limits the capacity, and lowers body, mind, and soul.—COUNT VON HAESLER, Ex-Commander Sixteenth Army Corps, Germany.

ALCOHOL POSITIVELY INJURIOUS

Alcohol can not be advantageous, can not even be harmless, but is proved to be positively injurious.—*British Medical Temperance Review*.

ALCOHOL A FOE TO HEALTH

Alcohol at the threshold of life is a bar to success and a foe to health.—T. A. MACNICHOLL, M. D., New York.

THE BONES

THIRD YEAR

For the first lesson on bones, it will suffice to call attention to their place and use in the body, and to the more obvious ways in which children can aid the growth and development of a strong body framework.

DIFFERENT KINDS OF FRAMEWORK

How many boys in the room have ever made a kite? What part did you make first?

What part of a boat is built first? Of a house?

What part of a picture keeps the glass in place?

Suppose the boat builder does not make the frame of his boat strong, what happens? Please tell me what kind of a frame a boat needs?

Is your body built upon a frame? Who can tell what it is called? (Write on the board the name, skeleton.)

The carpenter builds a house for us. Who builds our bodies for us? (Bring out the idea that each child is the builder of his own body.)

CARE OF BODY FRAMEWORK

When people have lived in a house many years and it is old and ready to tumble down, they can have a new one built. Can we get a new body?

We can repair the one we have, but we can not get a new one.

If you could have only one suit of clothing in a year, how would you care for that suit?

We can learn to care for our bodies so that they will be useful to us as long as we live.

USES OF THE SKELETON

Please touch the part of your body where the skeleton is largest. Why does this part need to be so large?

What parts of your body does it support? What parts does it contain?

Please place your hands as I place mine. What do you feel? (The ribs.)

What do we call the bony ridge in the middle of our backs?

Of what use are the ribs and spine to your heart, lungs, and stomach?

What part of your skeleton helps you to stand and move about?

What part helps you to row or play ball?

What part of your skeleton holds the brain?

Has a jelly fish a bony framework? Why not? What can you do that you could not do if you had no bony framework?

John may stand and move his head in as many ways as he can.

Ellen, her hands.
Grace, her fingers.
Harry, his legs.
George, his feet.
William, his trunk.

Why can we bend our bodies in so many ways?

HELPS TO GROWTH

Are your bones alive?

They do not seem to be alive but they are. The blood carries food to them to keep them alive and make them grow.

What will help the framework of our bodies to grow strong and large?

Please name some of the best kinds of food and drink.

Name some we should not use.

HINDRANCES TO GROWTH

We have learned that children should not use tea and coffee.

Many grown up people drink too much tea and coffee and also drink it too strong.

Any drinks containing alcohol are likely to dwarf a child's body and keep it small.

Cigarettes may hinder a child's growth.

CORRECT POSITION

If we wish to have a straight body, we must not stoop when we sit or walk. We must stand evenly upon our feet. We must not sit on one foot.

(Show the children how to raise the chest.

Formerly the command was "throw your shoulders back." The person could do so and still maintain a stooping position. If one is taught to lift the chest, the shoulders assume the correct position. As often as convenient, give the direction "lift the chest.")

Call attention to buildings and bridges and the care taken to make the framework of each very strong. We should take the same care of our body framework.

THINGS TO REMEMBER

We have a skeleton to give us shape.

It helps us when we work and play.

Our bones are alive.

They need good food and pure water.

Drinks that contain alcohol do not feed the bones.

Cigarettes hinder growth.

AUTHORITATIVE QUOTATIONS

TEA DRINKING BY CHILDREN

As a drink for infants and young children tea can not be too strongly condemned. First, because in children under two years of age it is very frequently given as a substitute for milk which should be the basis of their diet. Second, because when allowed to older children the taste for tea rapidly becomes a craving, and it is invariably taken in excess, in which case the effect upon the health is disastrous. — MATTHIAS NICOLL, JR., M. D.

ALCOHOL ARRESTS

GROWTH

Alcohol arrests the growth. Children of alcoholic parents, trained to the early use of liquor, are stunted in their growth.—*Bulletin de L'Academie de Med.*

ALCOHOL A POISON TO THE HEALTHY BODY

Alcohol hinders the physical and mental development of children. Alcohol is poison to the healthy body. Physicians of all lands who understand the facts today declare unanimously that children should receive no alcoholic drinks. — *Allg. Schweizer Ztg.*

TOBACCO CONTAINS A POISON

The smoker can not escape the poison of tobacco.—MARSHALL HALL, M. D.

TOBACCO UNDERMINES THE HEALTH

The use of tobacco gradually undermines the health of the strongest man. For years he may not realize it, but let an attack of severe illness overtake him, and he is unable to withstand the ravages of the disease, because his system is saturated with a narcotic poison, and he succumbs to an attack from which one who is not a tobacco user might readily recover. —W. H. RILEY, M. D.



"Ring out the old, ring in the new.
Ring, happy bells, across the snow."

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"E'en though we found the Old Year's way
Grow hard and harder day by day
With joy we greet the New Year's sway.

"O New Year keep thy promise rare!
Whatever grief our hearts must bear,
Be thou at parting glad and fair."

BAD SCIENCE AND BAD ETHICS

THE study of temperance physiology was introduced into our public schools about twenty years ago. Soon after the children of this country quite universally were studying the physiological reasons for obeying the laws of health, including those that teach total abstinence from alcoholic drinks and other narcotics, with indorsed books adapted to grade in their hands, the brewers began to complain of loss of profits.

Then criticisms, vague and indefinite, began to appear, charging that the indorsed textbooks were inaccurate in their teaching on the alcohol question. These charges, emanating from many different sources, culminated in the attacks of the physiological sub-committee of the Committee of Fifty which were triumphantly refuted. This refutation in pamphlet form, entitled "Reply" to this sub-committee, on motion of Senator Gallinger, a distinguished physician, was made a government document (Senate Document No. 171) by the unanimous vote of the United States Senate.

Whoever examines these different attacks extending over a period of ten years or more, and the replies to the same which are all on file at the Bureau of Scientific Temperance Investigation, will observe that manifestly one hand and one purpose pervades them all, and that silence, when their false charges are refuted, has been a common method.

But it would be a mistake to infer that because these critics do not always answer back at once that therefore they have given up the battle. When enough time has elapsed for the story of the absolute refutation of their charges

to have passed from the public mind, the same old accusations appear again, asserted as vociferously as if they had not been proved false.

This is well illustrated by the recently issued "Summary of the Report of the Committee of Fifty," which contains some of their former attacks upon scientific temperance instruction as unblushingly restated as though these had never been shown to be unwarranted.

The purposes of the Committee as seen in this book, like those of other critics, are two in number. The first is shown in the following quotation from page 35 of the "Summary":

"It is not desirable to attempt to give systematic instruction to all children in the primary schools on the subject of the action of alcohol or of alcoholic drinks. To older children, and especially those in the high schools, it does seem proper that instruction should be given as to the principal facts known about the use and effects of alcoholic drinks."

To carry out this recommendation would take the study away from 90 to 95 per cent of the future voters of our land, because that proportion of pupils does not remain in school long enough to reach the grades where the committee think this subject ought to be taught. They give no reason for this recommendation.

We can understand why brewers and owners of brewing stock should be unwilling for the future majorities, the law-making power of this country, to be taught the real nature of alcoholic drinks and other narcotics as shown by modern science, but not why an intelligent American citizen who wants only the welfare of his country should desire the same thing.

The poor man's child who must early leave school to go to work, and can therefore stay in school only through the lower grades, has as much need of this study as the more affluent, and the state has need that such children, while they stay in school, shall receive just as much instruction on this vital subject as they can comprehend, to fit them to become good citizens. That every child, the poor as well as the rich, is heir to the knowledge of all the ages is a fundamental principle of our government for the people.

The second purpose of the critics is set forth by them on page 37 of the "Summary of the Investigation" in the following sentences:

"It should not be taught that the drinking of one or two glasses of beer or wine by a grown-up person is very dangerous, for it is not true."

"[Alcohol] when taken habitually should be only at meals, and as a rule, only with the last meal of the day or soon after it."

How do they know that the first statement is not true? No one has ever yet been able to foretell whether a given person is always immune to the power of alcohol to destroy self-control.

How does the Committee of Fifty know that any adult person may not have already reached the border line between self-control and the uncontrollable and destructive appetite which it is the nature of alcohol to create? In every drunkard's history there was a time when the drinking of one or two glasses of wine or beer was very dangerous.

The statement made in connection with the two quotations above that alcoholic drinks "are not needed by young and healthy persons, and are dangerous to them in so far as they tend to create a habit," throws out more distinctly the second purpose of this book, namely, to teach that moderate drinking at night with the last meal of the day is safe for adults, a statement unwarranted by science and morally pernicious, and one that if not refuted will greatly multiply our annual crop of drunkards.

Professor Max Gruber very forcibly stated the fallacy of these assertions in saying, "No one can foretell whether or not he is susceptible to alcohol. He finds out only by playing a game of chance with his own life which is a dangerous experiment."

Even if the adult drinker himself does not enter a drunkard's grave, can the Committee of Fifty prove that the drinking at night of one or two glasses of beer or wine with the last meal of the day will have no disastrous effects upon his descendants?

Dr. T. A. MacNicholl says :

"In a study of the relation of heredity to the mental deficiency of children, undertaken for the New York Academy of Medicine, I was forcibly impressed with the conspicuous position occupied by alcohol. A more extensive study verifies the facts then described, and gives added emphasis to alcohol as a factor in mental deficiency. . . .

"Of the children of drinking parents but abstaining grandparents, 73 per cent were dullards.

"Of the children of abstaining parents but drinking grandparents 78 per cent were dullards.

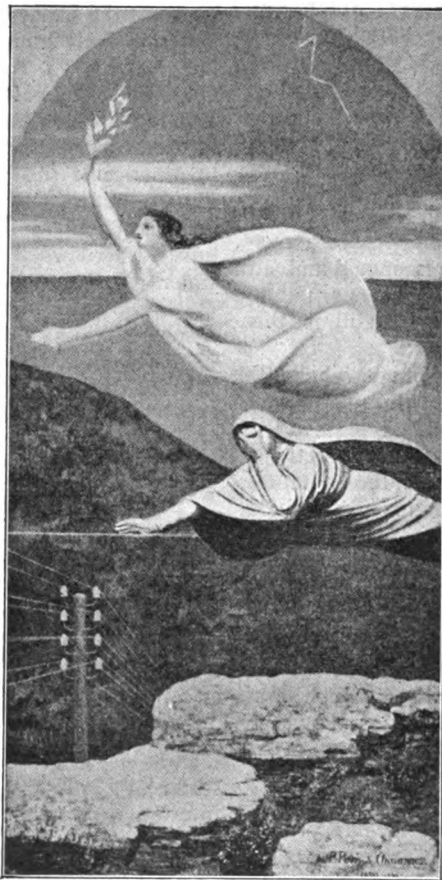
"Of the children of abstaining parents and grandparents, 4 per cent were dullards. . . .

"Alcohol, by destroying the integrity of nerve structures, launches hereditary influences which by continuous transmission gain momentum and potency and leave their impact upon gland and nerve until mental faculties are demoralized, physical energies hopelessly impaired, and the moral nature becomes degenerate and dies."

Men who attempt to advise the public as to the safety of using alcoholic drinks should know the foregoing facts.

The attempt is again made in this "Summary" to re-galvanize into life the age-old fallacy that in some sense alcohol is a food, in the face of the awakened testimony of science to the contrary, well expressed by Professor Kassowitz of Vienna who recently said, "A poison like ethyl alcohol can not be called a food."

Any attempt to uphold moderate drinking by adults with the last meal of the day or at any other time, that omits in the same connection to portray the power of alcohol to enslave the drinker and his children and children's children, is a most pernicious use of half-truth, the worst form of an untruth.



"They gladly come and sadly go,
The New Year white as drifted snow,
The Old Year dark with sin and woe."

THE WONDERFUL WEAVER

There's a wonderful weaver
high up in the air,
And he weaves a white
mantle for cold earth
to wear.

With the wind for his shuttle,
the cloud for his loom,

How he weaves, in the
light, in the gloom !

O, with finest of laces he decks bush and tree ;
On the bare, flinty meadows a cover lays he.

Then a quaint cap he places on pillar and post,
And he changes the pump to a grim, silent ghost.

But this wonderful weaver grows weary at last,
And the shuttle lies idle that once flew so fast ;

Then the sun peeps abroad on the work that is
done,

And he smiles ; "I'll unravel it all, just for fun."

—Selected.

REFUSAL TO CO-OPERATE WITH THE COMMITTEE OF FIFTY

Resolutions unanimously adopted by the National Woman's Christian Temperance Union at Los Angeles, California, 1905.

WHEREAS, Every charge brought by the physiological sub-committee of the Committee of Fifty against the teaching of scientific temperance in the public schools and against the indorsed school literature on this subject has been triumphantly refuted in the "Reply" to that sub-committee, which was made a government document (Senate Document 171) by unanimous vote of the United States Senate, February 27, 1904, and

WHEREAS, In spite of this fact, the committee preparing the last report of the Committee of Fifty—entitled a "Summary of Investigations on the Liquor Problem"—although no longer characterizing the scientific temperance movement as an "educational excrescence" and an "incubus" to be removed from our public school system, as it did at first, has still in this "Summary":

1. Reiterated its former charge, which its experiments did not prove, that this instruction is unscientific and undesirable.

2. Stated that these educational methods receive little or no support from the members of the medical profession, which is unsustained by fact.

3. Continued to oppose systematic instruction to all children in the primary schools on the subject of alcohol or alcoholic drinks, proposing to confine such instruction to older children, especially those in the high schools.

4. Suggested that the schools teach that beer and wine in moderate quantities may be in a certain sense a food, although an expensive one, *i. e.*, that when taken habitually it (alcohol) should be only at meals or after the day's work is done, implying that there is little or no danger in such practice for adults; therefore

Resolved, That we, the National Woman's Christian Temperance Union, in Convention assembled at Los Angeles, California, express our regret at the continuance of these unfounded attacks of the Committee of Fifty against this teaching which the American people have made compulsory in the public schools of the entire nation, and

Resolved, That we call the attention of the Committee of Fifty and the general public to the following facts concerning the action of the medical profession in behalf of this study:

1. The action of practically the entire medical profession of Great Britain, in recommending to every school board in England, Scotland,

Ireland, and Wales, through a committee of their most distinguished members, the Course of Study in Physiology and Hygiene prepared by the Department of Scientific Temperance Instruction of the Woman's Christian Temperance Union of America, a course which specifies as subjects that must be taught to save a nation from degeneracy the very statements challenged as inaccurate by the Committee of Fifty.

2. The resolutions unanimously and enthusiastically passed by the American Medical Society for the Study of Alcohol and Other Narcotics, at their annual meeting held in Portland, Oregon, July 12, 1905, in connection with the annual meeting of the American Medical Association, in which they declare that they rejoice in the evidence that the public school "teaching in America of physiology and hygiene, including the nature and effects of alcoholic drinks and other narcotics, is resulting in better obedience to the laws of health and in a growing sentiment in favor of public sanitation and total abstinence, and urge upon boards of education, teachers, and all intrusted with the instruction of the children and youth of our land, the importance of the most faithful enforcement of our temperance education laws."

3. The report of the committee on the teaching of hygiene in the public schools submitted at the last annual meeting of the American Academy of Medicine, another national medical society, which declares that the development of the school literature in temperance physiology "has paralleled that of medical text-books during the same period, and that it is probable no other kind of school literature has evolved so rapidly to this degree of merit; that it is certain that no other country has so good; and that the leading physicians and educators of England almost unanimously, and those of Germany and of lesser governments, are urging the American teaching of hygiene and temperance on a physiological basis," and

Resolved, That inasmuch as the omission of this study in primary schools, confining it to older children, especially those in the high schools, which the Committee of Fifty recommend, would take it from the majority of the future American citizens (the coming law-making power), and would be a violation of the spirit of the laws of the entire nation, and of the letter of the laws in the great majority of states which require this study to be pursued by all pupils in all schools (thus defeating the object of the law—which is to secure a strong achieving race of intelligent total abstainers), and as the Committee of Fifty and every one else have failed to prove that the moderate use of alcohol by adults either "be-

fore or after meals" or "after the day's work is done" will never result in an uncontrollable appetite which may destroy the drinker or entail upon his descendants the consequences which follow even the moderate use of alcohol; therefore, the Woman's Christian Temperance Union of the United States can never co-operate in any scheme of education which will take this study from the lower grades, or modify in any way the utmost warning authorized by science against the beverage use of alcohol at any period of life, which can be comprehended by children in a progressive study for all grades of our public schools, and

Resolved, That inasmuch as the Committee of Fifty now admit that the text-books used in our public schools are usually in accord with what they consider extreme total abstinence views, and that the publishers often find it difficult to sell text-books (in temperance physiology) which are not indorsed, *i. e.*, approved by a competent committee officially authorized by the National Woman's Christian Temperance Union to examine the books, we rejoice in these facts, since they are evidence that the American people want their children taught in full the physiological reasons for obeying the laws of health, including those which teach total abstinence from the beverage use of alcohol, and

Resolved, That these resolutions be given to the press of the country, that they be sent for publication to the *Union Signal* and other temperance and religious papers, and that they be printed in leaflet form by the superintendent of the Scientific Temperance Instruction department, Mrs. Mary H. Hunt, for general distribution.

MRS. FRANCES E. BEAUCHAMP,
Pres. Kentucky, W. C. T. U.
MISS MARIE C. BREHM,
Pres. Illinois W. C. T. U.
MRS. HELEN M. STODDARD,
Pres. Texas W. C. T. U.
MRS. B. LAYTHE SCOVELL,
Pres. Minnesota W. C. T. U.
MRS. ANNIE W. CLARK,
Pres. Ohio W. C. T. U.

ANOTHER YEAR

BY JOHN W. CHADWICK

Another year of setting suns,
Of stars by night revealed,
Of springing grass, of tender buds
By winter's snow concealed.

Another year of summer's glow,
Of autumn's gold and brown,
Of waving fields and ruddy fruit
The branches weighing down.

NEW YEAR RESOLUTIONS

BY ELLA WHEELER WILCOX

AS the dead year is clasped by a dead December,
So let your dead sins with your dead days lie.
A new life is yours, and a new hope.
Remember,
We build our own ladders to climb to the sky.

Stand out in the sunlight of Promise, forgetting,
Whatever the past held of sorrow or wrong.
We waste half our strength in useless regretting;
We sit by old tombs in the darkness too long.

Have you missed in your aim? Well, the mark is still shining.
Did you faint in the race? Well, take breath for the next.
Did the clouds drive you back? But see yonder their lining.
Were you tempted and fell? Let it serve for a text.

As each year hurries by let it join that procession
Of skeleton shapes that march down to the Past,
While you take your place in the line of Progression,
With your eyes on the heavens, your face to the blast.

I tell you the future can hold out no terrors
For any sad soul while the swift stars revolve,
If he will stand firm on the grave of his errors,
And instead of regretting, resolve, resolve.

It is never too late to begin rebuilding,
Though all into ruins your life seems hurled,
For see how the light of the New Year is gilding
The wan, worn face of the bruised old world!

"Johnny," said his mother, severely, "someone has taken a big piece of this ginger-cake."
Johnny blushed guiltily.
"Oh, Johnny," she exclaimed, "I didn't think it was in you!"
"It isn't all," replied Johnny. "Part of it's in Elsie."—*Journal of Education*.

Through the courtesy of two Kansas City business men, Mr. R. A. Long, President of the Long Bell Lumber Company, and Mr. Robert Keith, President of the Robert Keith Furniture Company, the SCHOOL PHYSIOLOGY JOURNAL has been placed in each of Kansas City's fifty-eight schools. This is an example that deserves emulation by business men in other places.



A CURRENT FALLACY

AN attempt, not wholly disinterested, is being made to make it appear that beer is food because chemical analysis shows that it contains certain substances (proteids) that are classed with foods. This from the scientific point of view is arrant nonsense.

You may help your class to accurate ideas on this subject by beginning an exercise with this question on the board,

What is food?

Refer the class to their text-books, and help in expression until a pupil called to the board can write the answer,

DEFINITION OF A FOOD

A food is any substance that nourishes the body, or furnishes heat and energy without injuring it.

Have the class write this definition in their note-books, lead them to discuss it, and ask questions, impressing upon them the importance of remembering it as it will help them rightly to decide important questions.

Then state a case like this:

If I were to mix water, sugar, and well-boiled oatmeal water, would such a drink be a food? When the class has tried it by their definition, they will decide that inasmuch as it furnishes heat and energy to the body and does not injure it, it is a food.

We will suppose that we have four quarts of this pleasant and healthful drink. Now if I were to add a few grains of arsenic to it could it still be called a food?

Does not the sugar and oatmeal still furnish heat and energy? Why, then, is it not a food?

Bring out the point that a poisonous substance has been added.

But the quantity of arsenic in the beverage is small and one might drink several glasses without being fatally poisoned. Might not one safely drink one small glass with meals?

Draw out the facts that although the amount of arsenic is so small and is diluted with so much fluid yet its nature remains the same, and its effects on the body will be harmful just in proportion to the amount of the mixture drunk. The teacher may explain that some people have even taken arsenic for some time and in increasing doses and appeared to be unharmed.

Would that necessarily prove that a sufficient quantity would not prove fatal? Some of the class will no doubt have read or heard of some fatal case of poisoning from this drug. She may further explain that arsenic, in common with some other poisons, may be taken in small quantities and, though constantly undermining the health, may not produce death for a long time.

(If desirable, the story may be told of the spring that made many beautiful, but killed them at last.)

Even so, would it be wise to drink a beverage that contained even a trifling amount of poison?

BEER

A few days before this subject is brought before the class, ask some pupil to bring to school a small quantity of barley. Lay part of the grain aside and place the rest in warm water, planning to have the grains well sprouted at the time of the lesson.

Let members of the class chew some of the grain that is sprouted and then some that is not, and note the sweet taste of the former. What change has taken place? Explain that when barley is treated this way, then heated to kill the germ and crushed, it is called malt. Is the barley good food? Is the malt food? Why?

Suppose that a brewer took a large quantity of this malt and to it added some hops, or other bitters, water, and yeast, and kept it in a warm place, what change would take place?

By questions and reference to books bring out the fact that the yeast has broken up the particles of sugar into carbon dioxide and alcohol, and that most of the food materials in which the barley was rich have been decomposed and changed into these new elements. What is the drink now called?

Explain that ales and porters are manufactured in much the same way. Make the point perfectly clear that the good barley from which the beer or ale was made has been changed by this chemical process of decomposition and that the beer is no more like the barley than a rotten apple is like a sound one.

Beers contain from four to six per cent alcohol. This being true can they be called a food?

Write upon the board the question,

DEFINITION OF A POISON

What is a poison?

Question and refer to books till some pupil can write on the board the definition,

A poison is any substance whose nature it is when absorbed into the blood to injure health or destroy life.

Have the pupils write this definition also in their note-books, and lead them to discuss it. Ask them to mention as many poisons as they can.

Make it clear that although when we speak of poison we are likely to think of something like Paris green or strychnine which kills quickly, others, none the less deadly, may be taken in very small amounts for a long time without appearing seriously to injure the health. Such are arsenic, already spoken of, alcohol, morphine, and others.

Now we have this beverage, containing a little sugar, residue of malt, extracts, and alcohol.

According to the two definitions shall we

classify beer as a food or a poison?

Tell the familiar story of the saloon-keeper in England who advertised his beer as "liquid bread," and how a member of the British Parliament had a chemist examine it. Two per cent was really food, five per cent was alcohol, and the remaining ninety-three per cent was water.

All that is nourishing in this could be purchased in bread at one-tenth of the cost. A healthy grown person in order to get a sufficient quantity of this kind of food for one day would be obliged to drink eight quarts of beer, which would contain about nine ounces of alcohol.

Allowing that there are two parts of a certain kind of food (proteid) in one hundred parts of beer, does that make beer a food?

Let us see what its effect is on the body. It

contains about five parts in a hundred of its bulk in alcohol which, although much diluted, remains unchanged, a poison still.

EFFECTS OF ALCOHOL ON THE BODY

What is the effect of alcohol on the body?

From questions and references to their physiologies help the children to learn and then write in their note-books what the effect of alcohol, even when taken in what is called moderation, is upon

The heart and circulation,

The digestive organs,

The excretory organs,

The brain and nerves.

Emphasize the fact that alcohol, even when taken in small quantities, as in beer and

other light drinks, produces changes in the nervous system and thus has the power to create what is called the alcoholic habit, an uncontrollable desire for more.

Instances are not hard to find where large quantities of beer or spirituous liquors have killed persons outright.

Develop a definition something like this:



"Not dead, but only dreaming of the day
That once again shall voice the sweet Spring's call
Of summer's murmuring music."

ALCOHOL A POISON

Alcohol is a substance which, when absorbed into the system, injures to a greater or less degree every part of the body, and has the power to create an uncontrollable appetite for itself.

Let some child write this definition upon the board. Have the class copy it in their note-books and comparing it with the definitions of a food and a poison determine for themselves that it is a poison.

If, then, this beer certainly contains a quantity of poison, is it safe or unsafe to drink it?

AUTHORITATIVE QUOTATIONS

Even were alcohol demonstrated to be actual food under certain conditions, that would not

invalidate its description as a poison. It might be a poisonous food, like the poisonous honey which slew so many soldiers in the famous "Retreat of the Ten Thousand."—NORMAN KERR, M. D., F. L. S.

Dr. Koppe of Germany, in his book, "Das Alcoholsichtum," says :

"The chemical nature of a substance can not change with the quantity, and can not be lost in the smallest quantity ; but must in every qualitative analysis remain the same, as long as by progressive divisions this substance as such still exists, even down to the last molecule."

The character of a substance does not depend upon its quantity but its quality.—BENJ. WARD RICHARDSON, M. D., LL. D., F. R. S.

BOOK NOTICES

A MAN OF THE WORLD, by Annie Payson Call. Little, Brown, & Co., Boston. 50 cents net.

Readers of Miss Call's former books, "Power through Repose," "The Freedom of Life," etc. will look in this volume for a sane, strong presentation of the theme chosen, and they will not be disappointed. The man of the world whom she portrays is not a worldly man, but one who, knowing life as it is, its good and bad, deliberately chooses to live, as nearly as he is able, in harmony with the best it can offer, and to render intelligent service to his fellow men. Such essays are an inspiration, to young men especially, although it should by no means be limited to them.

THE CRUCIFIXION OF PHILIP STRONG, by Rev. Charles M. Sheldon. Advance Publishing Co. Chicago. Price, paper 25 cents ; cloth 75 cents.

Bishop Vincent who writes the introduction says "The demand of the pulpit in our age is the power to set forth by words well chosen, and by attractive parables which give truth in concrete form, the possibilities of individual and social life . . . When I read the 'Crucifixion of Philip Strong' I hardly knew the author . . . but the story it seemed to me, was born in a soul impressed with and sometimes oppressed by the reality of life. The earnestness of a divine conviction seemed to run like fire along every line . . . It is a wonderfully strong and effective contribution to the Christian literature of this age. Every minister ought to read it—and everybody else." We heartily concur in Bishop Vincent's opinion, and wish the book might be placed in every school, Sunday-school, and public library in the land. As a story it is interesting; and as a convincing plea for the

abolishment of the saloon, Sabbath-keeping, the brotherhood of man, and the right use of wealth, it has few equals.

HIS MOTHER'S PRAYERS, by Rev. Charles M. Sheldon. Advance Publishing Co. Chicago. Price 10 cents.

The stories of Mr. Sheldon with their intense interest in humanity are well known to many of our readers. In this story of the widowed mother whose mind has been weakened by the loss of her younger children through the neglect of her drunken husband, the power of alcohol to blight and ruin young as well as old life,—for one of the older boys follows his father's example,—is vividly portrayed. The reader's interest and sympathy are enlisted from the start.

WHO KILLED JOE'S BABY, by Rev. Charles M. Sheldon. Advance Pub. Co., Chicago. Price 10 cents.

A powerful argument against licensing the saloon. It is so inexpensive that it can be freely circulated in no-license campaigns. If judiciously cut it would make a thrilling recitation. It is the story of the fine baby boy who came to broad-chested, big-hearted Joe and his sweet wife Norah, of the saloon that was opened in the town, and of the temptation that was thus thrust upon Joe who had become a sober man only through the most heroic struggle against appetite and his removal to this little village where no saloon was then located. How he was finally overcome by the temptations offered by the new saloon, until in a drunken sleep he killed the baby, is the saddest part of a story that finds its counterpart in many a town and city. And in every such case, it is not only the man who suffers arrest and punishment who is guilty of crime, but also the man who sells the liquor and the voter who allows him to do so. God alone can fix the measure of responsibility that belongs to each.

PHYSIOLOGY TOPICS FOR JANUARY

PRIMARY—Parts which help us to move about: Legs, Feet, Toes. Sense of Smell ; why important. Necessity of Pure Air. Brain : Location, Use, Care.

INTERMEDIATE—Respiration. Lungs. Deep Breathing. Exercise. Hand and Foot compared and contrasted. Effect of Narcotics. Temperature of Body ; how maintained. Clothing.

ADVANCED—Lung Development ; how to prevent Consumption. Special Senses ; how made more acute. Structure of Body. Composition of Bone and Muscle.

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With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

Elementary Anatomy, Physiology and Hygiene For Higher Grammar Grades. By Winfield S. Hall Ph.D., M.D., Professor of Physiology, Northwestern University Medical School. Price, 75 cents

Treated according to the inductive method, beginning with the easily observed facts of plant physiology and leading by comparison up to human physiology and hygiene. Simple illustrations and experiments, but no dissections, are presented in connection with the physiological facts. A particular feature of the book is the lessons on domestic economy which form a noteworthy contribution to one of the most important problems of sociology.

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FEBRUARY, 1906.

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It is a reproduction of the fine photograph of Mrs. Hunt which appeared on the first page of the Dec. 1904 JOURNAL. We hope many of our readers will avail themselves of this opportunity to secure one of these excellent pictures of the leader of Scientific Temperance for their local schools.

School Physiology Journal

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School Physiology Journal

Vol. XV

BOSTON, FEBRUARY, 1906

No. 6

WORK

BY HENRY VAN DYKE

LET me but do my work from day to day
In field or forest, at the desk or loom,
In roaring market place or tranquil room ;

Let me but find it in my heart to say,
When vagrant wishes beckon me astray
"This is my work ; my blessing, not my doom.
Of all who live, I am the only one by whom
This work can best be done in the right way."

Then shall I see it not too great, nor small,
To suit my spirit and to prove my powers ;
Then shall I cheerful greet the laboring hours,
And cheerful turn when the long shadows fall

At eventide, to play and love and rest,
Because I know for me my work is best.

THE BEGINNINGS OF SCIENTIFIC TEMPERANCE

BY MARY H. HUNT

HOW did you become interested in scientific temperance instruction in the public schools, is a question I am so frequently asked that I am constrained to reply, although to do so is to open the door of deep personal experience. Not of sorrow because of the use of alcohol by my own loved ones, for I have been spared that bitterness, but because it is difficult to speak of the invisible power that can haunt the soul and shape destiny for one obedient to the vision, almost compelling choice by its clear portrayal of the path one is to take.

I had been a professing Christian since my young girlhood ; but in the early 70's a deeper religious experience came to me, a part of which was a broadening sense of the meaning of God's kingdom on earth. I was profoundly moved in a way I could not understand by the clause in our Lord's prayer, "Thy kingdom come." I could not hear that petition even in public worship without trembling with emotion.

I prayed for wider Christian service, thinking the answer might be a new pupil in my Bible class, or another poor family I might help, but the real answer was yet to come.

I had been professor of chemistry in one of our eastern colleges. In the course of the scientific reading I had kept up after my marriage, I came upon Youman's work on the physiolog-

ical action of alcohol, and the reports of experiments showing the nature and effects of alcoholic drinks made by Dr. B. W. Richardson of England. My previous studies in chemistry enabled me to follow Dr. Richardson's work, and to see that as alcohol is a brain poison that deadens the mechanism through which the soul responds to spiritual and moral motives, its use as a beverage, in the nature of things, is a hindrance to the coming of God's kingdom in human hearts, just in proportion to the extent of its use, and furthermore, that, as it is the nature of alcohol to destroy the individual's capacity for self-government, its use by Americans means destruction of this free government.

I further saw that the beginning of the whole drink evil is the ignorance of the people as to the real nature of alcohol and the power of a little to create the desire for more that may become uncontrollable. Thus I came to see that the education of the whole people concerning the dangerous character and evil effects of alcoholic drinks is the logical preventive of this greatest of all hindrances to the answer to the prayer, thy kingdom come," and to every petition for the safety of our republic. These conclusions haunted me until they became the commanding conviction that somebody ought to secure such education, but I did not then dream that I was to help secure it.

About that time the marvelous Crusade Movement came, finally taking permanent form as the Woman's Christian Temperance Union, with branch organizations in every part of the country. I joined this body of consecrated women, and spoke in their meetings of the need of education as to the revelations of modern science against alcohol. Aroused interest led to invitations far and near to present this aspect of the subject. The people were ready to hear.

In 1879, I presented my convictions to Miss Willard, at that time my guest, and my plans as far as developed, which have resulted in the legislation that now makes the study of the laws of health, including those that teach total abstinence from alcoholic drinks and other narcotics, compulsory for the millions of children in the public schools of the United States.

She listened with interest, but seemed to think it was a shot at long range. At that time she was presenting what she called Home Protection, her method for the overthrow of the drink evil through woman's ballot. "But," she added, "come to the National Woman's Christian Temperance Union Convention to be

held at Indianapolis this fall, and we will appoint a standing committee with you as chairman to carry out your ideas of scientific temperance instruction in the public schools." I went, and was made chairman of such a committee.

The report of the appointment of this committee in the Minutes of the Indianapolis Convention is the first mention in the records of the National Woman's Christian Temperance Union Conventions of any one receiving the authority of that body to secure officially the introduction of this study into the public schools.

I am asked if there was not a recommendation for the creation of a department for scientific temperance instruction in public schools in Miss Willard's plan of work presented to the first National Woman's Christian Temperance Union Convention, in Cleveland, November 18, 1874.

The minutes of that convention contain a recommendation for "teaching the children in Sabbath schools, and public schools the ethics, chemistry, and hygiene of total abstinence."

But Mrs. Mattie McClellan Brown, a surviving member of that committee, says, "Miss Willard did not write that recommendation which it was agreed she should read to the convention; I myself wrote it." Then she adds, "But, my dear Mrs. Hunt, I did not dream of the magnificent method you have devised and carried to glorious execution in this country."

Miss Willard was a woman of rare ability and did a marvelous work along other temperance lines, but not this.

The next year after the appointment of this committee it was, at my request, merged into the Department of Scientific Temperance Instruction of the Woman's Christian Temperance Union, and I was appointed superintendent. In this capacity, it has been my duty to organize the work by securing workers in all parts of the country, to originate and direct plans of work, and to co-operate with state, county, and local workers in carrying out those plans which have made this form of temperance education a part of the public school system of America.

The first and always present feature of this work has been to study carefully the testimony of the many different sciences involved to learn if total abstinence is defended by science.

The feasibility of making the nature and effects of alcoholic drinks a prominent feature of the study of the laws of health, and of making both a part of our public school course had also to be studied pedagogically.

School statistics had to be carefully scanned to find in what grades this study must be pursued in order to reach the coming majorities, the law-making power in this country.

The possibility of a government of the people making this study compulsory had to be consid-

ered. All this and more were features in the inception of the plan which has made this study a success in the public schools.

As already intimated, one of the main features in this education has been from the first and still is an exhaustive study of the findings of science as to what is true and should therefore be taught on the whole subject of hygiene, including the truths as they have been rapidly revealed by science concerning the nature and effects of alcoholic drinks and other narcotics. Without this exhaustive and expensive investigation which it has been my lot to conduct and financially support through all these years, the whole undertaking would have been a failure.

When law-makers said there was nothing to teach, we were able to bring forth from the storehouse of accumulated facts a long array of scientific testimony concerning the truth that should be taught. And when the accuracy of the teaching of the indorsed books in the schools has been assailed, we have had in the same repository ready defence for these truths against alcohol which, as taught in the schools, are helping to make us the most sober of the great nations.

These, in brief, are the main facts in the history of the beginning of this movement as I know them. They are based on records and reports as well as experience and recollection.

To tell only briefly of the campaigns in the great and smaller states and in the National Congress which have made this study universally compulsory, and of the attacks upon and defense of the scientific truths concerning total abstinence and other laws of health that are being taught the children of the American people, would fill a volume. Every step in the progress of this cause during the past thirty years has been a hard fought battle, marvelously defended by the same unseen Power which compelled its inception.

For myself I claim no credit. As a leader of the mighty hosts of godly Christian Temperance Union women in this work, I have tried to follow the great Leader without whose guidance all our efforts would have been in vain.

As Director of the Bureau of Scientific Temperance Investigation and Superintendent of the Department of Scientific Temperance Instruction, I have worked my passage without salary or personal profit from text-books.

Between \$8,000 and \$9,000 each year are expended by the National Bureau and Department in literature, foreign and American, wages to secretaries and stenographers, printing, postage, office supplies, travelling, etc. Towards this amount the National Woman's Christian Temperance Union contributes \$800 per year. \$1,200 are promised for the coming year. The balance is met by the proceeds of my literary

and platform work, and by contributions personally solicited by me from churches, societies, and individuals who see the relation of this form of education to the preservation of the republic.

Roaming in thought over the universe, I saw the little that is good steadily hastening towards immortality;

And the vast all that is called evil I saw hastening to merge itself and become lost and dead.

—WALT WHITMAN.

The Woman's Christian Temperance Unions of Delaware, at the last state convention, voted to send the SCHOOL PHYSIOLOGY JOURNAL to every public school in the state for the current year. Delaware has already made a record for herself in prize contests in the interests of scientific temperance, and now, with the additional help of the JOURNAL provided monthly for the teachers, we may expect a yet greater impetus to be given to this important work of educating the children in the physiological reasons for obeying the laws of health, including those which teach total abstinence.

Frequent reports come to us of the gratitude of teachers for the gift of the JOURNAL. One county superintendent of schools writes:

"You good people have done an excellent thing in placing the SCHOOL PHYSIOLOGY JOURNAL in so many schools. Your effort will bear fruit in abundance. I thank you in the name of the teachers."

FOUR RULES FOR SMOKERS

Never smoke before a meal, as tobacco is hurtful on an empty stomach.

Never smoke after a meal, because tobacco produces indigestion.

Never smoke out of doors, because you become a public nuisance.

Never smoke indoors, because you become a nuisance to your family.—*Crusader Monthly*.

THE VITAL FACTOR

BY THEODORE ROOSEVELT

THE Golden Rule should be, and, as the world grows in morality, it will be the guiding rule of conduct among nations as among individuals.

This government stands for manhood first, and for business only as an adjunct of manhood.

In the long run, the one vital factor in the permanent prosperity of the country is the high individual character of the average American worker, the average American citizen, no matter whether his work be mental or manual, whether he be farmer or wageworker, business man or professional man.

We desire to set up a moral standard. There can be no delusion more fatal to the nation than the delusion that the standard of profits, of business prosperity, is sufficient in judging any business or political question—from rate legislation to municipal government. Business success, whether for the individual or for the nation, is a good thing only so far as it is accompanied by and develops a high standard of conduct—honor, integrity, and civic courage.

FEBRUARY

BY CHRISTINA ROSSETTI

I WONDER if the sap is stirring yet,
If wintry birds "are dreaming of a mate,
If frozen snowdrops feel as yet the sun,

And crocus fires are kindling one by one:

Sing, Robin, sing;

I still am sore in doubt concerning spring.

I wonder if the springtide of this year
Will bring another spring both lost and dear;
If heart and spirit will find out this spring,
Or if the world alone will bud and sing;

Sing, hope, to me;

The sap will surely quicken soon or late,
The tardiest bird will twitter to a mate;
So spring must dawn again with warmth and bloom,

Or in this world, or in the world to come;

Sing, voice of spring,

Till I, too, blossom, and rejoice, and sing.



MARY HANCHETT HUNT

(Taken in the early years of her work for Scientific Temperance Instruction.)



Primary Lessons

FIRST YEAR

THE HAND

DURING the last decade the value of manual work for children has come to be appreciated. Psychology has shown that the power to think and the power to do are closely related. Training in the one is to a great extent training in the other.

In a variety of ways this knowledge has been applied to school work. It begins in the kindergarten and lasts through the high and technical schools.

In the primary grades it is unwise for the teacher to have the children attempt fine work of any kind. They are not ready for it, and it may injure them. But hand work that is suitable for the grades should always be used to supplement and illustrate the lessons. Encourage the use of the left hand as well as the right in all such work.

ITS SHAPE AND PARTS

Put the hand down flat on a piece of paper and trace its shape.

What parts do you find?

How many fingers?

How many thumbs?

What is the inside of the hand called? The palm.

The outside? The back.

How are the fingers joined to the main part?

What are the knuckles for?

Bend the fingers in as many places as you can. Are they stiff or limber?

How many parts to each finger? What is the name of the place where the finger bends?

How many joints on each finger? How many on the thumb?

What grows on the ends of the fingers? Of what use are the nails?

COMPARISON WITH ANIMALS

What have animals instead of hands?

What is the difference between a cat's paw

and your hand? Between a horse's fore foot and your hand?

Can you think why there should be so much difference?

What has a bird instead of hands? A fish?

USE OF THE HANDS

What do we do with our hands? Which hand do we use when we write? When we sew? When we eat?

Most people use the right hand for these things, but it is well to make the left hand do as much as it possibly can. Then if we hurt the right hand the left will be ready to take up its work.

CARE OF THE HANDS

How shall we take care of the hands? How often shall we wash them? What shall we use to make them clean?

How ought we to keep our nails? What shall we use to clean them? How long shall we let them grow? What must we never do to our nails?

When it is very cold weather and we go out without our mittens, how do our hands feel the next day? Sore.

At night, if we put a little cold cream or mutton tallow on our hands, and rub it well into the skin, it will make them feel softer and better.

Our hands are little servants. If we would have them do good work, we must keep them clean and treat them well.

SENTENCES

We have two hands.

There are four fingers and a thumb on each hand.

We write with the right hand.

We must keep our hands clean.

EXERCISES

(Probably the teacher can not use all of these exercises in one lesson. They may follow more violent exercise.)

Class stand.

Arms forward stretch.

Hands close, open.

Arms sink.

Arms sidewise stretch.

Hands close, open.

Arms sink.

Arms upward stretch.

Hands close, open.

Arms sink.

Arms forward stretch.

Hands shake rapidly from wrist.

Arms sink.

Class sit.

THE ARMS

FIRST YEAR

WHILE the first grade is too early for much training of the fingers, anything that requires sweep—arm and wrist movements—will be in order.

We can not tell what the future holds for the child, but a good physical development will never come amiss in any walk in life.

A strong arm is essential to a blacksmith; it is no drawback to a lawyer or a minister. A skilful hand is necessary for a dressmaker; it does not hamper the housekeeper or writer.

SHAPE OF THE ARMS

What shape is your arm?

Here is a base-ball bat. What is the difference between the two?

Try to pick up something from the floor without bending your arm or wrist. Why is it hard to do this?

In how many places can you bend your arm? What do we call the parts of the body which bend?

What is the upper joint of the arm called?

Move your arm from the shoulder. In how many ways can you move it?

What is the name of the joint in the middle of your arm? How does that bend?

Is there any difference between the way you can bend your arm at the elbow and the way you can move it at the shoulder? Tell about it.

What is the name of the joint between your arm and hand?

How many parts are there in the arm? They are called fore arm and upper arm.

USE OF THE ARMS

What do we use our arms for? Name some things which you could not do if you did not have arms.

What do the birds have instead of arms? What do they do with their bills that they would use hands and arms for, if they had them?

What have animals instead of hands and arms? What do they do with their mouths that they might use hands and arms for?

TRAINING OF THE ARMS

How do we want our arms to grow? What can we do to make them grow strong?

Can you think of any game that will make the arms strong? What work will make them strong?

If we want them to grow strong, we must use them every day.

Did you ever see the arms of a blacksmith? Why have his arms grown so strong?

Using our arms every day will make them strong.

SENTENCES

I have two arms.

My arm bends at the elbow.

I move my arm from the shoulder.

The wrist is between the arm and the hand.

EXERCISES

(Not more than one or two of these exercises should be used at one time. They are offered merely as suggestions.)

Class stand.

Arms bend (fists touching shoulders).

Right arm forward stretch 5 times.

Left arm forward stretch 5 times.

Alternate arms forward stretch 5 times.

Both arms forward stretch 5 times.

In same way, arms upward, sidewise, and downward stretch.

Right arm upward, left arm sidewise stretch.

Arms change 5 times.

Right arm forward, left arm upward, stretch.

Change 5 times.

Class sit.



"A smile as bright as mine may be
Precisely your necessity."

Alcohol, even in small quantities, when taken by children, has a direct effect in retarding, not only the physical but their mental development. It must be accepted as a fact that very small quantities of alcohol interfere with the growth of tissue, with the growing muscles and developing nerves of children.—G. SIMS WOODHEAD M.D., F. R. S. E., Cambridge University, London

TASTE

SECOND YEAR

CALL one of the children to the front of the room. Ask him to shut his eyes and hold his nose tightly with his handkerchief.

Place a bit of apple in his mouth and have him try to tell what it is by the taste alone.

If he fails, as he probably will, try him with another piece while he keeps his eyes still shut, but this time has his nose uncovered.

If I give you something to eat which you have never seen, how do you know you like it?

Would you rather go on an errand alone or have some one go with you?

SMELL ASSISTS TASTE

Taste has a friend near by who lives in a double house.

What is this friend's name?

What sense helped Taste to know it was apple I gave John?

Tell me the names of other foods you know by the smell as well as by the taste.

Smell and taste live near each other, and help each other.

When you have a bad cold, can you taste well?

When you have burned your mouth with a hot drink, can you taste well?

You have a friend that stands at the door of your mouth and tells you what it would like to keep out. This little friend is dressed in red. What is his name?

If you eat an apple in the dark and should bite into a decayed spot, what would tell you not to swallow it?

Do you think you would enjoy eating if all food was tasteless?

Taste is a very good friend, but sometimes we can not trust him.

TRAINING OF THE SENSE OF TASTE

We can train Taste just as we can train the voice.

If you wished to train an animal, when would you begin?

If you wished to train him to eat only good food, would you ever give him bad food?

Would you try to make him think bad food was good for him? Why not?

If you are careful about feeding your pet animals, what kind of food should you give yourself?

If your father gave you a new knife and should see you trying to whittle a stone with it, what do you think he would say to you?

What would the stone do to the edge of the knife?

You do not like a dull knife because it does not do good work.

THINGS THAT DULL TASTE

A dull taste can not do good work.

If your taste is dulled you can not enjoy anything you eat.

There was once a boy who learned to smoke cigarettes. At first he thought they did not hurt him. But after a time he grew weak and sick.

He had to give up work. Nothing he ate tasted good. When he smoked he said it gave him "a dark brown, fuzzy taste."

Any one who has dulled his taste by using tobacco and alcohol can not enjoy his food so well as he might.

THINGS TO REMEMBER

I can train my taste so that I shall like only good and healthful food and drink.

Animals will not taste drinks that contain alcohol.

Alcohol and tobacco dull the sense of taste.

ALCOHOL DULLS THE SENSE OF TASTE

What dulls the sense of smell and the sense of taste is the glass of beer—the glass of spirits.—DR. VACHER, F. R. C. S.

It has been demonstrated that in perfectly healthy young individuals moderate doses of alcohol lessen the special senses in an almost uniform ratio, so that vision, hearing, smell, taste, touch, and muscular force are all appreciably lessened.—HENRY O. MARCY, M. D., LL. D., in *Journal American Medical Association*.

A NURSERY TEA

BY ELIZABETH LINCOLN GOULD

WHEN I have cake and jam enough
For two, or maybe three,
I beg Louise or Grace to come
To supper here with me.

But when there isn't very much,
And yet I'd like a guest,
I'll tell you who's the nicest one,
The pleasantest and best;

It's my dear Angelina Maud,
'Cause when I move her up
In her high chair, and set for her
A plate and spoon and cup,

And things to eat, she sits right there
With such a lovely smile,
And not one bit of appetite!
And when a long, long while

Has gone, and still she doesn't touch
A mouthful, then I say,
"I'll eat your share to save it,"
And she smiles and smiles away!

TOUCH

SECOND YEAR

BEFORE giving this lesson, make a collection of objects varying in texture and size, and place them on a table where all the class can see them.

Call as many of the children as time will allow, singly, to the front of the room. Place the child with his back to the table. Ask him to put his hands behind him.

TESTS TO RECOGNIZE OBJECTS BY TOUCH

Put one of the objects into his hands and have him tell what it is.

Put a square block in one hand, a round one in the other, and ask the child to say which is which.

Put a bit of cotton in one hand, silk in the other. Ask him to name each.

Make similar tests with other familiar objects.

Another day the teacher may have in a basket a sufficient number of objects for the whole class.

Ask the children to close their eyes, drop the right hand at the side.

Place an object in the hand of each child, having told the class they must play fair, and that no one must open his eyes until he has told what he has. He may then watch the other pupils.

Ask each child how he knew he had a piece of cotton, etc.

How can we tell wool from cotton?
Cotton from silk?

A peach from an apple?

An apple from a plum?

A marble from a ball?

The bark of a tree from a cane?

How much can you find out about a ball by touching it? A piece of ice, a pencil, the floor, a pail, your desk, the door knob, a nail, a book, a piece of wood, cotton, silk, a snow ball, a cup of cocoa, a piece of iron, a blade of a knife, a needle, a pin, the leg of a chair, a peanut, a feather?

II

The object of this lesson is to acquaint the child with the different qualities of objects and show how touch will help him in this.

SHAPE OF OBJECTS

Place a child as directed in the foregoing lesson, and give him a sphere and a cube.

Ask him to hold up the sphere, the cube.

How do you know which is which?

(To the class.) What sense helped John to tell one from the other? Ask the class to name things that are spherical, things that are cubical.

The teacher may then write this statement on the board :

The sense of touch tells us the form of an object.



My father says I help him more
Than any man he's had before.

TEXTURE OF
OBJECTS

Call another child, and place in his hand two objects nearly alike in size and shape, but entirely unlike in texture and ask him to tell the class the difference.

Ask the class to name things that are smooth ; thing, that are rough
(Board statement :)

The sense of touch tells us whether objects are smooth or rough.

TEMPERATURE OF OBJECTS

Suppose we had two glasses of water on this table, one filled with warm water, the other with cold ; what sense would help us to tell one from the other if our eyes were closed?

(Experiments may be performed if warm water is available.)

Class name things that are hot, things that are cold.

(Board statement :)

The sense of touch tells us whether things are hot or cold.

WEIGHT OF OBJECTS

If I have a piece of wood and a piece of iron,

both the same size, how can I tell one from the other, without looking?

(Board statement:)

The sense of touch tells us whether objects are heavy or light.

Class name things that are heavy, things that are light.

(Speak of the wonderful things done by blind people by means of the sense of touch.)

Class read statements from board.

LOCATION OF TOUCH

Where is our sense of touch?

Are there any parts of our bodies that have no sense of touch?

Let the children experiment until they find out that the sense of touch is present in all parts of the body except the hair and tips of the nails. Why not in these parts?

HOW TO HANDLE OBJECTS

We need to know how to touch or handle things.

If one of you should bring a glass vase to school to show the other children, how would you wish them to handle it?

No one can do very fine work when he grows up unless he can handle things carefully and hold them steadily.

EFFECT OF ALCOHOL AND TOBACCO

The use of alcohol and tobacco weakens the nerves that guide the hand. It makes them unsteady.

People who do delicate work need steady hands.

What kind of a touch do we need?

THINGS TO REMEMBER

We can learn many things by touch.

We should handle things carefully.

We need to hold things steadily.

Alcohol and tobacco may make the hands unsteady.

It would be educative if, following this lesson, the teacher should lay a flower or an article not valuable on the desk of the child who sits in the front seat of the first row. Let him pass it to the next child, and so on.

When it has gone the rounds, let the class decide whether or not it has been handled carefully.

AUTHORITATIVE QUOTATIONS

BODILY TRAINING AIDS MENTAL DEVELOPMENT

Physical training, in developing the capacity of self-direction and self-control in the pupil, of necessity develops the will. The child who is so educated physically as to discover that he has gained complete command of what would have remained an awkward and uncouth body, soon learns from the masterly control of a well-knit physique to overcome all obstacles.

—*Dietetic and Hygienic Gazette.*

ALCOHOL MAKES THE HANDS UNSTEADY

So far from thinking quickly, he [the man who has taken alcohol] is really thinking more slowly; so far from calculating better, he is calculating worse. And what is true of the effect of alcohol on the thinking part of the brain is equally true of that part of the brain which governs the finer movements of our hands and other fine movements. When a person thinks he is executing a movement more accurately, exactly the opposite is the case.—SIR VICTOR HORSLEY, M. D., University College, London.

THE POISON IN TOBACCO SMOKE

In some particulars the physiological action of nicotine and of carbon monoxide is similar. The dizziness and stupor, the trembling of the limbs and hands, the disturbance of the nerve centers and of the circulation, and the feeble pulse may be the indications of either carbon monoxide or nicotine poisoning. One ounce of tobacco gives no less than one fifth of a pint of pure carbon monoxide gas when smoked in the form of cigarettes, and probably as much more in the form of cigars or pipes.—*London Lancet.*

SAVED HIS HAND

A young laboring man was brought to a certain hospital with a badly lacerated hand.

As time passed on the surgeons watched carefully for signs of blood poisoning, fearing that the entire hand would have to be amputated to save the life of its possessor. These signs not appearing, the surgeon delayed operating, and after a time it began to mend, and finally healed entirely.

"Young man," said the surgeon to the patient, as the danger was passing away, "do you use alcohol in any form?"

"No sir."

"Do you use tobacco?"

"No sir."

With a wave of his hand, a nod of his head, the surgeon murmured.

"That is what has saved your hand."

—*Temperance Cause.*

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We would be one in hatred of all wrong,
One in our love of all things sweet and fair,
One with the joy that breaketh into song,
One with the grief that trembles into prayer.

One in the power that makes Thy children free
To follow Truth, and thus to follow Thee.

JOHN W. CHADWICK.

HYGIENE IN PUBLIC SCHOOLS

Report of the Committee on the Teaching of Hygiene in the Public Schools, presented to the American Academy of Medicine at its last annual meeting and published in the *Bulletin*, for June, 1905.

REFERENCE has been made before in these columns to the able report of the committee of three, Dr. H. C. Putnam, chairman, appointed by the American Academy of Medicine to investigate the teaching of hygiene in our public schools. We are glad this month to quote from this report somewhat more in detail.

A brief history of the present universal scientific temperance legislation in this country is first given, and well deserved tribute is paid to the Woman's Christian Temperance Unions throughout the country who, associated with "professional men and women of good standing in the law, the ministry, medicine, science, and education, have organized and directed public sentiment among the home-makers, the intelligent and law-abiding throughout the great territory of the United States, and in twenty years have accomplished the evolution of these laws to their present stage, and secured a fair degree of enforcement—a much more difficult task."

The committee traces the steps in the evolution of these laws towards "accuracy of expression, and addition of details to cover weak points through which the intention of previous laws had been evaded," and gives the chief points of each law. It calls attention to the fact that "these laws leave ample openings for other text-books, methods, teachings, to any interested in hygiene (including temperance for physiologic reasons) who have the capacity to take advantage of such openings to demonstrate better ideas."

Up to 1882, although there had been desultory attempts since the days of Horace Mann, little or no hygiene was taught even in high schools. The few attempts at teaching physiology and anatomy were looked upon with distrust by parents and teachers who considered this subject as embarrassing and possibly dangerous to children. An examination of the books of those times explains in part why this was so, for there were no suitable elementary books, the four or five first prepared having proved "impossible," and the very few academic books being so overloaded with anatomy and technical terms as to be almost as bad.

The antagonistic attitude of parents and untrained teachers "maintained a vicious circle of inefficiency from which the first series of four graded volumes [the Pathfinder] was a radical departure to find a path by which the truths of science can be adapted to children's minds."

As to the physiologies of the present, the Committee states:

"It is probable that no other kind of textbook has evolved so rapidly to this degree of merit. It is certain that no other country has so good, and that the leading physicians and educators of England almost unanimously, and those of Germany and lesser governments, are urging the American teaching of hygiene and temperance on a physiologic basis."

The changes brought about in this evolution of text-books are clearly shown by a comparison of the best five "school" books in use twenty-two years ago with the "New Century Series."

"The alterations in content are consistent with our quarter century's progress in science and the art of teaching (e. g. Osler's "Practice of Medicine," 1892-1902.)

"In form we must admit that evolution is improvement. We note the light little volumes for little hands, the artistic illustrations appealing to childish interests; the clear type and its helpful arrangements in convenient sections of resumes, experiments, glossary, and index; all these features graded to different ages, and particularly complete in the high school volume.

"In order to secure freshness and variety in the various grades, the books of this series are written by different authors, but co-ordinated.

"Of the 262 pages of text in the high school volume, 127 pages are given to hygiene, 27 of them being for temperance instruction, while those previous to 1883 gave less than one-twelfth to hygiene, and no temperance matter. The characteristics of this presentation are its lucid style, simplicity, conformity to the latest discoveries in science, and the variety of illustrative experiments and practical points on daily hygiene.

"We can but admire the ability, judgment

and tact with which all, including temperance, for physiologic reasons, have been harmonized in this latest volume of the evolution.

"The elementary volumes are more experimental, being the product of but twenty years' effort, and are even more important since they reach nineteen-twentieths of the pupils—those from the social classes greatly needing knowledge of hygiene in their poor environment.

"Modern pedagogic methods are based upon the idea of the ascending spiral. Each branch essential to community living is introduced in the first year as far as the child can understand each. In successive years they are recurred to on a higher plane.

"The law has long recognized language, numbers, and physical environment as essentials—to which it now adds health. Thus every child, in whatever year compelled to leave school, has received to the extent of his capacity something of these four.

"The oral lesson book of this series, the first of its kind yet written, is a suggestive 'pathfinder' for a group of teachers who have had much difficulty in bringing science down to their pupils. As in this latest volume, so, unquestionably, the indorsed books thus far have initiated the majority of practical improvements.

"Of the excellent intermediate book, more than one-half is devoted to hygiene and all its teachings are based on rudimentary science."

The elementary "volume, with its minute and gross anatomy, its physiology and its hygiene as far as it goes, is correct—theoretically, scientifically, logically.

"In all the indorsed books and most others the ideal of a healthy, active, physical life as a basis for success and happiness is kept in the foreground.

"Before 1898 the superiority was clearly in favor of the indorsed books, . . . and it still continues that for average teachers and schools the series of four or five grades issued under indorsement are better adapted, more nearly complete, and more nearly on pedagogic lines.

"Indorsement, so far as it affects the quality of a book, means that three or more readers, better educated, specially trained by years of practice in criticism of school physiologies, students of the problems involved from teachers', pupils', authors', public and 'scientific temperance' view points, do systematically go over the volume, noting not only errors as to the nature and physiologic effects of alcohol, but also errors in English, indefiniteness, illogical statements, repetition, exaggeration, unnecessary difficulties, unsuitable words, inconsistencies, dogmatism instead of explanation, scientific inaccuracies, poor taste—chiefly in giving facts that seem simple to the author, but have unfortunate

influences on children of certain ages. Undoubtedly some faults are overlooked, and readers, like authors, are fallible; but every editor can appreciate the advantage of such examination, as do many authors."

Through the courtesy of the New York State Central Committee, a year's subscription to the SCHOOL PHYSIOLOGY JOURNAL, beginning with January 1906, is being sent to all city superintendents, superintendents of villages with more than 50,000 population, and all superintendents and principals of graded schools in New York State. The New York State Central Committee is composed of representatives of churches, temperance, philanthropic and other organizations throughout the state, with Rev. Dr. Burrell, pastor of the Marble Collegiate Church, New York City, chairman, and Mr. Alfred L. Manierre, a lawyer of New York City, secretary and treasurer.

"Scatter thy wishes, and their arrows fall,
Broken and spent, beneath Fate's frowning wall;
Forge from their fragments one sharp spear of will—

The barriers frown, but thou shalt pierce them still!"

We should so live and labor in our time that what came to us as seed may go to the next generation as blossom, and what came to us as blossom may go to them as fruit. This is what we mean by progress.—HENRY WARD BEECHER.

TRIUMPHANT DEMOCRACY

BY EDWIN MARKHAM

What do we need to keep the nation whole,
To guard the pillars of the State? We need
The fine audacities of honest deed;
The homely old integrities of soul;

The swift temerities that take the part
Of outcast right—the wisdom of the heart;

Brave hopes that Mammon never can detain,
Nor sully with his gainless clutch for gain.

We need the Cromwell fire to make us feel
The common burden and the public trust
To be a thing as sacred and august
As the white vigil where the angels kneel.

We need the faith to go a path untrod,
The power to be alone and vote with God.



Grammar Lessons

FIFTH OR
SIXTH YEAR

WHAT TO DO IN EMERGENCIES

THERE was a time, and not so very long ago, when both parents and children thought the study of physiology and hygiene ornamental rather than useful; consequently they were often uninterested even when not antagonistic. Fortunately, the growing appreciation of the fact that future usefulness and success depend largely upon physical soundness has changed this attitude.

A few lessons yearly, especially in country places where doctors and medicines are usually some distance away, should be devoted to emergencies. These may be the means of averting the serious or possibly fatal consequences of some accident. The teacher may begin by telling a true story of what was done in an emergency like the following:

OPIUM POISONING

A mischievous little girl named May found a bottle of paregoric and drank a part of it.

Her mother discovered almost at once what she had done, and knew that if prompt action were not taken her child would fall into a deep sleep and never wake up.

The doctor was miles away, and before he could arrive the poison would have done its work. The mother must save her life.

The first thing to be done was to get rid of the poison, so she gave the child a great deal of warm water with salt and mustard in it, and it soon brought up the poison.

But May was so little, and the poison was so powerful that it had already begun to take effect, so her mother gave her some strong coffee, for that is an antidote for any kind of opium poisoning. Even in spite of the antidote she fell into the deep sleep from which, if left alone, she would never awake.

Her mother wakened her, and for hours rubbed her hands and feet, made her walk, and even switched her with a whip to keep her from sleeping.

At last, with the help of the coffee, and the exercise to keep the blood circulating, the effects of the poison wore away. When the doctor came, he said May's mother had done just the right things to save her life, and that late in the evening she might be permitted to go to sleep.

Ask some pupil to reproduce the story.

What is the poison in paregoric? Explain that paregoric, laudanum, morphine, and morphia are all forms of opium.

Bring out the salient points of the treatment for opium poisoning, and have the pupils take notes in their notebooks.

Ask members in the class if they have known any similar cases of poisoning. What was done for the patient?

Point out that most soothing and cough syrups, many preparations for summer complaints, and also many headache tablets contain considerable quantities of opium in one form or another and may produce opium poisoning. Make the treatment for all kinds of opium poisoning clear, *i. e.*, emetic, antidote, continuous exercise to keep the blood circulating and to avoid the fatal lethargy.

Help the class to find the definition of a poison, and have it written upon the board. Ask them to mention as many poisons as they can. Classify them somewhat upon the board. Have the children take notes.

Make it clear that the general symptoms of poisoning are sudden nausea, dizziness and headache, and that in case poison is suspected it is wise to give an emetic, and call a doctor at once.

OTHER KINDS OF POISONS

When poison is known to have been taken, an emetic is always to be given *except* when the poison is an *acid* or an *alkali*.

Under acid poisons write nitric, sulphuric (oil of vitriol), oxalic and carboic acids, and the appropriate antidote. No emetic.

Under alkali poisons write ammonia, caustic soda, potash, lye. Give antidotes. No emetic.

Under opiate poisons write paregoric, laudanum, opium, morphine, morphia, and many soothing or cough syrups, remedies for summer complaint, and headache powders or tablets. Emetic. Antidotes.

Miscellaneous poisons would include arsenic, Paris green, or rat poison, mercury, lead, matches, kerosene, aconite, belladonna, poisonous plants like toad-stools, wild parsley, and berries of the mountain ash.

Emetic. Antidotes.

Now develop the point that while we ordinarily think of a poison as a substance which may produce death quickly, there are other sub-

stances which though they may seem to act slowly are also poisons.

Speak of poisons which are cumulative in their effects, like arsenic, lead and alcohol, and show that when taken in small quantities it is their nature to injure health, and in large doses to destroy life. Mention some cases of acute alcoholic poisoning where death ensued quickly.

ALCOHOL A POISON

Point out the fact that alcohol may really be more dangerous than such poisons as arsenic and Paris green which the laws require to be labeled "Poison"; because people have thought it was good for food and medicine and almost always begin by taking a little in such attractive form as beer, wine, or cider.

They can not at first see the harm it does their bodies, and so they drink more and more till the harmful effects begin to become apparent, and then they often discover they have formed an uncontrollable appetite for it.

Other poisons have antidotes, but as Sir Frederick Treves, LL. D., Surgeon to King Edward says: "It [alcohol] is an insidious poison in that it produces effects which have only one antidote, alcohol again."

In speaking of alcoholic and other poisoning, the teacher must emphasize the idea of the ounce of prevention that is worth a pound of cure. Impress the children with the thought that they must never taste medicines when they do not know what they are; that many cases of poisoning come from carelessness in leaving poisons near medicine intended for internal use or where little children can get hold of them, and that all poisons should always be properly labeled and kept under lock and key.

COMMON ACCIDENTS

Ask the children to name as many common accidents as they can think of, and have these placed upon the board.

The list should include such things as fainting, frost bite, gun-shot wounds, snake or mad-dog bites, fits or convulsions, suffocation by strangling, or asphyxiation from illuminating gas or that in deep wells or mines, sprains, broken bones, burns, or scalds, person's clothing on fire, apparent drowning, sunstroke or heat stroke, wounds or bruises, bleeding from nose, veins, or arteries, foreign bodies in eyes, nose, ears, or throat, stings of bees, poisoning from nettles or poisonous plants, and any other which may occur to the teacher.

Have ready also a number of slips of paper upon which are written a list of accidents corresponding to those placed upon the board, and under each topic write briefly the details of a suppositious emergency of the sort indicated

by the topic. For instance, two children are alone in the woods and one of them cuts a gash in his forearm from which the bright red blood comes in spurts. What must his companion do for the patient?

Allow the children to select one or more of the topics written upon the board and give to each the corresponding slip of details. Each one is then to learn from parents, family doctor, or books just what ought to be done with the means at hand in such a case and tell the class. They may write out their remedy similar to a prescription.

BLEEDING

If it is the case of bleeding mentioned above, the pupil must explain how he knows that this is arterial blood, and the way in which it can be stopped with the material at hand.

Bring out the point that in emergencies one seldom has all he needs, and must be able to make good the deficiency. In this case he may have to tear up clothing to get strips of cloth for a tourniquet or bandages. Let him demonstrate to the class the manner in which a tourniquet should be made and applied. Class compare his treatment with that given in their books.

The teacher should correct errors and help the class as to the best method.

In connection with bleeding, the teacher should explain that in no case of bleeding should alcoholic drinks be given, even if they are at hand, first, because many experiments show that alcohol is not a stimulant, and second, because by partly paralyzing the nerves that regulate the blood supply there is danger of increased bleeding.

The manner in which bandages should be applied and various other points will suggest themselves to the teacher as proper to be taught objectively.

DROWNING

If the topic is a case of supposed drowning or asphyxiation, pupils may illustrate artificial respiration.

BROKEN BONES

Where bones are supposed to be broken, and the patient must be moved, have the point brought out that the broken limb must be supported by some sort of improvised splints, which may be even canes or umbrellas, or pieces of wood of any kind, with soft wrappings such as folded garments or cushions.

GUNSHOT WOUNDS

In connection with gunshot wounds, ask the class to give instances of the sort, and by questions bring out the fact that most if not all of

these cases were due to carelessness, such as handling a gun supposed to be unloaded, pulling a gun after one in climbing a fence, allowing the gun to remain cocked, etc.

Explain the great danger from lockjaw to be feared in the case of contused wounds, especially those from the deadly toy pistol and sometimes from torpedoes.

NON-ALCOHOLIC REMEDIES

These lessons may very properly furnish the occasion for a general talk on the subject of substitutes for alcoholic medication.

An article in the London "Hospital" not long ago commented upon the fact that our grandfathers, lay and medical alike, regarded alcoholic liquors as the prime resource in cases of severe illness or injury. Even today the majority of householders look upon the brandy bottle as a fetish to charm away disease and death. The "Hospital" says this is a "monstrous superstition" which is slowly but none the less surely yielding to modern scientific knowledge.

The article further says that yesterday shocks were supposed to be counteracted by brandy. Now it has been shown that to administer

alcohol to the individual suffering from shock is to increase the danger to his life. Thirty years ago it was considered iniquitous to withhold alcohol from patients suffering from typhoid fever. Now, as Dr. Burns writes, the average mortality from this disease of cases treated in the London Temperance Hospital during thirty-three years was lower than in others where the old regime prevailed.

Alcohol has been used as a stimulant in cases of fainting and the like, but some experimental scientists of high reputation have shown that alcohol is not, as was formerly supposed, a stimulant; that small quantities of alcohol do not have an appreciable effect on the heart, and that larger quantities act as a powerful depressant rather than as a stimulant.

Oliver Wendell Holmes once said that if all the drugs in the world were at the bottom of

the sea, it would be better for the people but worse for the fishes.

Teach the children that such poisons as opiates, alcohol, and others should never be prescribed except by a physician, and that simple remedies, among which one of the most valuable is water, hot or cold, are better every way than drugs of any kind.

In case of faintness, the sipping of cold water is one of the best stimulants known. Hot water taken internally, and hot or cold fomentations applied externally are specifics for many disorders.

Hot milk, in which a little pepper may be placed if desirable, sipped (milk should never be drunk quickly), is a stimulant which furnishes nourishment as well.

To break up a cold, hot lemonade or hot cinnamon or pepper tea taken before retiring will answer every purpose better than the once almost universal "whiskey sling."

The teacher may mention these and such other simple substitutes for liquor as seem wise.



First aid to the wounded

AUTHORITATIVE QUOTATIONS

Alcohol is a virulent poison, and as such should be placed in the list with

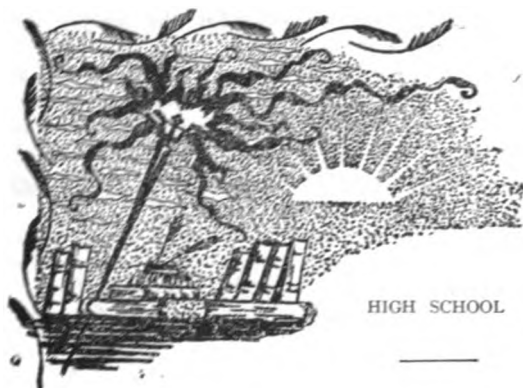
arsenic, mercury, and other dangerous drugs. ALFRED CARPENTER, M.D., University of London.

Alcohol is a poison. So is strychnine; so is arsenic; so is opium. (It ranks with these agents) Health is always in some way or other injured by it; benefited - never. SIR ANDREW CLARK, M. D.

Alcoholic poisoning is responsible for more disease than any other single cause.—A. STRUMPELL, M. D., Berlin.

If we were to include in one list the deaths directly due to chronic as well as acute poisoning by alcohol, it would stand first of all poisons in frequency.—WYNTER BLYTH on "*Poisons*."

The custom of placing alcohol among the so-called stimulants instead of grouping it with what we now know as narcotics, has tended to perpetuate misleading views regarding its therapeutic (curative) value.—T. N. KELYNACK, M. D.



THE DESTRUCTIVE ROLE OF ALCOHOL

IN preparing for this subject, the teacher should carefully review the formation and structure of cells and tissues as such. She should also go carefully over the chapters on formation of habit, in some good work on psychology, in order that she may be prepared to throw fresh light on this complex but very interesting and important question.

In taking up the subject with the class, read and discuss with them the following quotation from the text-book on Psychology by Professor James of Harvard:

"Sow a Habit—Reap a Character.

"Could the young but realize how soon they will become mere walking bundles of habits, they would give more heed to their conduct while in the plastic state.

"Every smallest stroke of virtue or vice leaves its scar. The drunken Rip Van Winkle in Jefferson's play excuses himself for every fresh dereliction by saying, 'I won't count this time.'

"Well, he may not count it, and a kind heaven may not count it, but it is being counted none the less. Down among the nerve-cells and fibres the molecules are counting it, registering and storing it up, to be used against him when the next temptation comes. Nothing we ever do is, in strict scientific literalness, wiped out.

"Of course, this has its good side as well as its bad one. As we become permanent drunkards by so many separate drinks, so we become saints in the moral, and authorities and experts in the practical and scientific spheres, by so many separate acts and hours of work."

Ask the class why youth must be even more careful than adults about the daily acts of life.

When are habits most easily formed? Why?

What danger in the oft repeated promise, "I will do better next time?"

What beneficent results will follow the formation of good habits in youth?

After a short discussion of these topics, take up the

ORIGIN OF ALCOHOL

Review the subject of fermentation.

If possible, obtain a good magnifying glass and let the class observe the different forms of moulds. A glass of 1-6 or 1-8 inch size will show yeast plants.

Ask what useful purpose in nature fermentation serves.

What are organized ferments? Have some of the forms of organized ferments described in class.

What are the most common examples of fermentation?

What chemical changes take place in the fermentation of bread? of wine, beer, or cider?

The brewers are advertising beer as a pure food and liquid bread.

Ask two members of the class to prepare short arguments, one trying to show that the position of the brewers can be maintained and the other that it can not, and let other members of the class speak for one or two minutes on the subject.

Let them quote from books, and any authorities they can find in support of their respective positions.

Sift the evidence, and help the pupils to see the difference between the evidence of special pleaders and obscure and doubtful authorities, and those of the highest rank in the medical and scientific world.

Lead them always to examine the standing of any man who claims to be an authority. Show that the authorities quoted by the brewers and distillers in newspaper articles and elsewhere do not rank among real scientists, the testimony of whom is always to prove that the amount of food compared to the whole bulk in beer and other liquors is infinitesimally small, that even this is overbalanced by the alcohol, and that these are poisonous beverages, the nature of which is to destroy health and life.

Why is fermented or leavened bread good while fermented drinks are harmful?

Emphasize the point that fermentation entirely changes the nature of foods like grapes, barley, and apples. For instance, wine is no more like grapes that rotten apples are like sound ones.

THE NATURE OF ALCOHOL

In taking up this part of the subject it will be very interesting and profitable to discuss the nature of alcohol under two heads, namely, what it has been supposed to be and what it really is.

To this end, question the class as to the various medical and food properties alcohol has been thought to possess, and write them upon the board.

These should include the "elixir of life," under which topic the discovery of distillation of alcohol by alchemists several hundred years ago may fall, and the following fallacies: alcohol is necessary to keep out cold; to ward off the effects of excessive heat; to give muscular strength; to quicken the wits; to prevent disease; it is the "milk of old age"; a "whiskey sling" breaks up colds and fevers; wine, beer, and cider are appetizers and aid digestion; evil results of alcoholism are due to adulterations; alcohol is a food because it may be partly oxidized in the body; it is good to decrease fatigue and with meals after the day's work is done; it is a real and valuable stimulant.

Let different pupils be prepared to show from books and different sources why each of these statements is a misconception of the nature of alcohol, and then tell what is really true in each of these cases.

Alcohol is a narcotic the nature of which is to effect harmful changes in the nervous system as well as other parts of the body, and to lead to a craving for itself which the drinker may not be able to resist.

Let some pupil be prepared to show that the ethyl alcohol of distilled liquors is exactly the same as that in fermented liquors, the quantity greater but the *quality* unchanged.

Show how alcohol produces a transitory feeling of exhilaration which is soon followed by relaxation. The person then takes more to relieve this feeling, and little by little the doses must be increased to produce the feeling of energy. After a time, the system becomes relaxed and the man is dependent upon the liquor to spur his jaded powers. When he uses larger quantities, he discovers it is affecting both his mind and his body, but he can seldom stop, for the will has been affected and is no longer capable of asserting its mastery.

EFFECTS OF ALCOHOL ON TISSUES AND CELLS

Review cells, cell growth, and tissues, paying special attention to nerve and muscular tissue.

Consider this topic under three heads, namely,

Effect of alcohol upon

The growth and development of the child,
The health and working power of adults,
The character of persons of all ages.

Compare cell and tissue growth of plants with that of animals, including man.

Explain the effect of alcohol, even when greatly diluted, upon the growth of plant cells and tissues.

Show that the results on human tissues are very comparable to those on plants. Since all growth comes from the healthy development of cells, what must needs be the result of alcoholic beverages and narcotics on children?

Make it clear that childhood and youth are the time set apart by nature for the growth of the body to its permanent form and size, and that if this development is hindered by lack of proper food, or by the use of poisonous substances, the result will be weakness of the organs or permanent deformity.

What are the effects of alcohol upon the brain and nervous system of an adult? What, then, must be the results upon the output of constructive mental work?

What is the explanation of the trembling

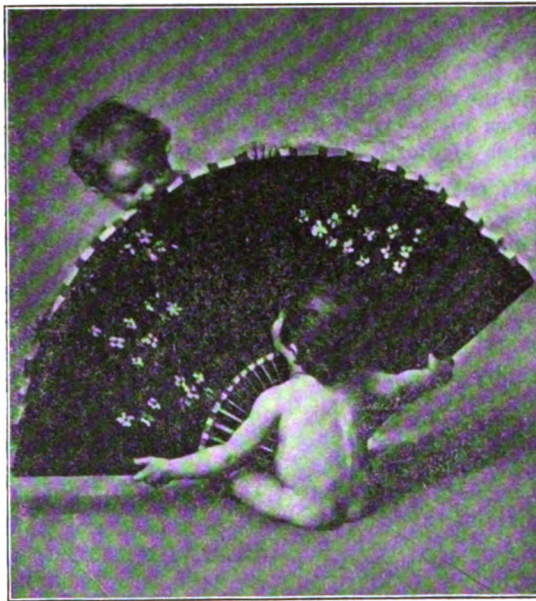
hands and limbs of users of liquors? How is a man's ability to do work requiring skilful manipulation and fine muscular sense affected by these narcotics?

What are the results of drinking on the special senses, sight, hearing, and taste?

Why do many railroad and other business corporations prohibit the use of liquors by their employees?

Note that it is not only the tippler's brains that are befogged, and the keenness of his senses to discover and avert danger greatly lessened, but the frequent yielding to temptation has relaxed his will power, blunted his moral vision and made him in every way an unreliable person.

Point out that, other things being equal, there is no position, even that of bar-tender, where



"If I may choose and call you mine,
You are every day my Valentine."

an abstainer will not be given the preference over even a moderate drinker.

Show that self-control and judgment are among the fundamental attributes of character and the latest to be acquired, but that they are the first to be impaired by tippling habits.

AUTHORITATIVE QUOTATIONS

Dr. Lorenz, the distinguished European surgeon says :

"I am a surgeon. My success depends on having a clear brain, a steady nerve, and a firm muscle. No one can take any form of alcohol without blunting these physical powers; therefore, as a surgeon I must not use any form of spirits."

Alcohol diminishes the keenness of the moral sense; it blunts the sharpness of discrimination between right and wrong, and it impairs the will power, the power to do the right, and easily leads its victims to a vicious life.—Daniel H. Brower, M. D., LL. D., Rush Medical College.

The craving for alcohol is not a natural appetite; it is not a demand set up by the tissues of the body for a new supply of the material needed for construction or repair. Enough food to supply this demand satisfies, more causes satiety; but the craving for alcohol increases with its supply."—H. Newell Martin, M. D., Late Professor of Biology, Johns Hopkins University.

Alcohol exerts an exceedingly deleterious action on rapidly growing tissues, interfering with their nutrition and preventing the development of their proper function. In old age, when the tissues are on the down grade and are subject to various degenerations, alcohol in most cases merely accelerates the process of decay.—G. Sims Woodhead, M. D., Professor of Pathology, Cambridge University, England.

All alcohol, and all things of an alcoholic nature, injure the nerve tissues *pro tempore*, if not altogether, and are certainly deleterious to the health. I think there is a great deal of injury being done by the use of alcohol in what is supposed by the consumer to be a most moderate quantity. It leads to degeneration of the tissues; it injures the intellect. In those effects which stop short of drunkenness, I should say from my experience that alcohol is the most destructive agent we are aware of in this country.—Sir Wm. Gull, M. D., F. R. S., London.

Dr. Forbes Robertson, the well-known neuropathologist, graphically, but with much scientific accuracy, likens the effects of an alcoholic debauch upon the nerve cells of the brain to the action of a storm sweeping over a great forest. Every tree bends and struggles to ward off the

attack. And when the hurricane is over the woodland looks but little changed when viewed afar. But a near approach reveals the ground covered with broken branches, and here and there a giant or a sapling uprooted and destroyed. In like manner irreparable damage may be wrought in the forest of the nerve cells of the human brain by alcohol.—T.N. Kelynack, M. D., in *Medical Temperance Review*.

BOOK NOTICES

NEW ANTI-SALOON SONGS. By E. S. Lorenz. Lorenz Publishing Co., New York. Limp cloth, 20 cents postpaid. Full cloth, 25 cents postpaid.

In editing this book of 138 hymns, songs, solos, duets, and choruses for both male and female voices, Mr. Lorenz has done a service to all temperance workers who are looking for a fresh collection of bright, usable pieces of music. Although it was compiled especially for the Anti-Saloon League, it is quite as well adapted for use by Good Templars, Woman's Christian Temperance Unions, Loyal Temperance Legions, or any other temperance organization.

We recommend it also to those who have occasion to make up programs for gospel or general temperance meetings.

NOT HIS OWN MASTER, by Mrs. G. S. Reaney, Advance Publishing Co. Price, paper, 25 cents, cloth, 40 cents.

The story of a young Englishman who left home, country, and the woman he loved to become a missionary to the Fuegians, of his adventures in that unknown land, his successes in his work, and the earnest devotion to his Master which at last won back his betrothed and made her willing to join him and help carry out his life purposes.

The touches of English life are pretty, and the descriptions of conditions in Terra Del Fuego are interesting because so unfamiliar to most readers.

PHYSIOLOGY TOPICS FOR FEBRUARY

PRIMARY—Parts of the Body used in Work and Play: Hands, Fingers, Thumbs. Sense of Taste. Cigarettes. Nerves of Sensation and Motion.

INTERMEDIATE—Nervous System. Bandages for Cuts. Treatment in Case of Accidents. Characteristics of a complete Food. Alcohol not a Food.

ADVANCED—Effect of Alcohol on Bodily Tissues. Alcoholic Appetite. Glands. Secretion. Common Poisons. Antidotes.

PAT'S PICK

100 OF THE SWEETEST, SANEST,
JOLLIEST SONGS EVER MADE

Compiled by Henry R. Pattengill

IT CONTAINS THE MUSIC TO THE KNAPSACK SONGS. IT CONTAINS
SONGS FOR

Opening Exercises, School Exhibitions, School Concerts, Special Day Exercises,
Patriotic Occasions, Teachers' Institutes and Association, That Boy, That Girl, Old
Folks and Young Folks, Saints and Sinners, Amateurs and Experts.

For the first time good words are set to the catchy air of "Dixie Land." "Pat's" Pick will put life and joy into
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BOSTON, MARCH, 1906

No. 7

THE MORNING SUMMONS

BY RICHARD BURTON

WHEN the mist is on the river, and the
haze is on the hills,
And the promise of the springtime
all the ample heaven fills;
When the shy things in the wood haunts and
the hardy on the plains
Catch up heart and feel a leaping life through
winter's sluggish veins:

Then the summons of the morning like a bugle
moves the blood,
Then the soul of man grows larger, like a flower
from the bud;
For the hope of high endeavor is a cordial half
divine,
And the banner cry of Onward calls the laggards
into line.

There is glamour of the moonlight when the
stars rain peace below.
But the stir and smell of morning is a better
thing to know.
While the night is hushed and holden and
transpierced by dreamy song,
Lo, the dawn brings dew and fire and the rap-
ture of the strong.

ALCOHOL AND THE DOCTORS

BY C. W. SALEEBY, M. D.

THE Bishop of London is reported to have
said, the other day, that the most hope-
ful factor in the campaign against alco-
hol is the conversion of the doctors, and those
of us who realize the increasing weight of med-
ical opinion may agree.

This year at Buda-Pesth witnessed the tenth
international Anti-Alcohol Congress, and the sa-
vants of all nations who there assembled may
take heart of grace from certain recent events.

For instance, the pioneer town of Gateshead
is shortly to be placarded with statements of a
few facts concerning alcohol; temperance is to
be taught in our schools—a generation too late.
London lately witnessed a meeting of doctors,
presided over by the King's physician, who met
in scientific conclave against alcohol; and an
American society has sent Sir William Broad-
bent its compliments in celebration of the cir-
cumstance that the children of this country are
shortly to be taught a few of the facts which

are not hidden from the twenty-two millions of
children of school age in the United States.

Plainly we have travelled since the day, some
sixty years ago, when the first teetotal doctor
was looked upon as a unique dangerous lunatic.

The intimacy of the relation between alcohol
and insanity has been commented upon in the
official report recently published; and to any
one familiar with modern text-books upon clin-
ical medicine, toxicology, pharmacology, dietet-
ics, therapeutics, criminology, pathology and
several other sciences, it must appear as one of
the most significant indictments of the human
intellect that, half a century ago, alcohol was
actually asserted to be necessary for health.

Since humanity first appeared upon the earth
till this morning—say for a quarter of a million
years—there has never been any kind of evi-
dence or proof or presumption or probability of
that assertion, yet it was believed.

So much for the notion that human beliefs
are determined by evidence.

We see now that the doctors of half a century
ago were wrong, and egregiously wrong, upon
every specific point connected with the proper-
ties of alcohol.

There was no clinical thermometer in those
days, so that the temperature of the body was
estimated by the subjective sensations of its
owner. Hence, alcohol was supposed to keep
one warm, to "keep out the cold."

Yet, in whatever dose, dilution, or combination
administered, alcohol never yet raised the tem-
perature of any warm-blooded organism. It
lowers the temperature by increasing the sta-
bility of the compound which the inbreathed
oxygen forms with the red coloring matter of
the blood, thus retarding tissue combustion, and
by throwing much warm blood to the surface
where it is cooled.

Also, alcohol was regarded as essentially a
nervous stimulant. Yet alcohol has been con-
clusively proved to retard mental processes in
the healthy subject; this by rigidly conducted
and confirmed experiments in many laboratories.
Again the paradox is due to the misinterpreta-
tion of subjective sensations.

Alcohol has also been acclaimed as a stimulant
of the digestion and appetite; yet any modern
text-book on pharmacology will inform you
that alcohol arrests digestion in measure propor-
tionate to its concentration, and destroys appe-
tite. Here the drug has been credited with the
properties of its aromatic or bitter accompani-
ments, and so forth.

The series of contrasts between what is now known concerning this drug, and what the doctors of half a century ago believed concerning it, might be almost indefinitely prolonged.

A short time ago some fifteen thousand of us made a formal recantation, in the shape of an unprecedented petition to the educational authorities, of the mistaken views held by our predecessors.

I take it, no one will suggest that the crank is a species so abundant as to number fifteen thousand amongst the doctors alone of these islands. But, of course, doctors are always "on the make"—and the idea may be to create a prejudice in the public mind against a valuable food and beverage, thus giving the doctor more work to do. If both these somewhat difficult hypotheses be rejected, there remains none more probable than that alcohol has been found out. And the question remains, What is to be done about it?

As to the validity of my indictment no competent and disinterested person will be found to dispute; but as to the plan of campaign the case is different. Medical unanimity there is none whatever.

Indeed, our differences of opinion are violent and irreconcilable. Readers of the recent discussion which I opened in the *Morning Post*, upon a brilliant and striking article of Dr. Archdall Reid's, may remember that he and some other medical men are inclined to the view that the race will never become sober until its susceptible strains have drunk themselves to death.

All our restrictive devices, says Dr. Reid, are wrong, and likely to be disastrous. England can become sober, as the Mediterranean peoples are sober, only by full exposure to alcohol, and elimination in course of ages of all amenable to its fatal charm. Dr. Reid has taught me most of what I know concerning heredity, but to this contention I can not subscribe.

The Commissioners in Lunacy have told us in their latest report that alcohol is related to some one in five of all cases of insanity. Most medical men would agree that this is a very moderate estimate, and it certainly falls below the figure given by Dr. Clouston, of Edinburgh, one of the first authorities in the world.

We may take it, then, that the relation extends to certainly not less than one case in five. In a large proportion of cases added to these, alcohol plays a contributing if subsidiary part; this even if we ignore the relation of the drug to those passions which, directly or indirectly, lead to so much insanity.

It is certainly true, as the Commissioners observe, that weakness of mind may lead to alcoholism; but to interpret this fact as tanta-

mount to "giving away" the whole case against alcohol is an absurdity only to be perpetrated by those who have a sufficiently obvious end to serve.

There are only too many cases where a mental instability, which would otherwise never have led to actual insanity, has ended therein by means of alcohol. There is established a vicious circle, of which alcohol is an essential part.

It can not be too frequently emphasized that heredity supplies only potentialities or tendencies, and that only by the action of a suitable environment, *e. g.*, alcohol, can these be realized. When this fact is understood we shall hear less of the abominable and utterly unscientific cant which would refer all human ills to an inevitable inheritance.—*Littell's Living Age*.

THE COMING OF THE SPRING

BY NORA PERRY

THESE'S something in the air
That's new and sweet and rare—
A scent of summer things,
A whir as if of wings.

There's something, too, that's new
In the color of the blue
That's in the morning sky,
Before the sun is high.

And though on plain and hill
'Tis winter, winter still,
There's something seems to say
That winter's had its day.

And all this changing tint,
This whispering stir and hint
Of bud and bloom and wing,
Is the coming of the spring.

And tomorrow or today
The brooks will break away
From their icy, frozen sleep,
And run, and laugh, and leap.

And the tassels soft and fine
Of the hazel will entwine,
And the elder branches show
Their buds against the snow.

So, silently but swift,
Above the wintry drift,
The long days gain and gain,
Until, on hill and plain,—

Once more, and yet once more,
Returning as before,
We see the bloom of birth
Make young again the earth.



Primary Lessons

FIRST YEAR

FOOD

THERE is no subject upon which more widespread ignorance has prevailed than that of proper food for children. Inquiry in many schools will disclose the fact that some children have come without breakfast, and that others have eaten things which would tax the digestion of a man who labored in the open air all day.

Many little ones are allowed to eat candy and cakes freely between meals. Such practice is sure to take away the desire for wholesome food and to upset the stomach. Instead, they should be given a small amount of sweets at the close of a meal.

Care must be taken even then that the candy be pure. The kind purchased by the child for a penny is often injurious.

Another bad practice, that is too common, is that of allowing children to drink coffee, tea, and even beer. The teacher should try in every way to discourage the drinking of these beverages. A glass of milk contains far more nutriment and lacks the injurious qualities.

ANIMALS' NEED OF FOOD

Mark had a rabbit that he was very fond of.

He found a nice place to keep it behind the barn, and his father helped him to build a fence of wire net, so that bunny could not run away.

His father told him to give bunny a drink of fresh water every day, and plenty of green leaves.

For a time all went well. Mark gave the rabbit plenty to eat.

But after a few weeks he grew forgetful. Once a day was as often as the rabbit had any food, and sometimes Mark did not remember to feed him at all.

One night, after Mark had had his rabbit about two months, his father said,

"Well, Mark, how is bunny getting on?"

Mark looked frightened.

"Oh, I have forgotten to feed him for three or four days," he said.

He ran to the rabbit-yard. There lay poor bunny, dead, with nothing to eat in sight.

What made Mark's rabbit die?

Does every animal have to eat? What will happen if it can not get food?

We know that all animals have to eat or they would die. When do they eat?

An animal seeks food only when it is hungry. How much does an animal eat? Only as much as it needs.

If it should eat a great deal more than it needed, what would happen? It would be sick.

After the dog or cat has eaten all it wants, what does it do?

Does it run and play, or does it keep still? It keeps quiet till its food has a chance to digest.

PLANTS' NEED OF FOOD

Do flowers need food? Where do they get it?

What would happen to seeds that were planted in sawdust, and had no earth for food?

PEOPLE'S NEED OF FOOD

Do people need food? What happens to them if they can not get anything to eat?

WHAT TO EAT

When do boys and girls need to eat?

What kind of food tastes good when you are hungry?

Bread and milk, bread and butter, and fruit are much better for you than cake, pie, or candy.

How much should you eat?

When you have had enough, do not eat more just because it tastes good.

Too much may make you sick.

When you have been running, and are hot and tired, you should rest a little while before you eat your dinner.

You will feel more like eating it after five or ten minutes' rest.

What do the dog and cat do after they have eaten?

Why is it good for boys and girls to rest awhile after eating?

You should not play tag, nor run and jump for at least a half hour after dinner.

SENTENCES

We eat when we are hungry.

We drink when we are thirsty.

Cool water and fresh milk are good to drink.

We should not eat too much.

GUESSING GAME

I am thinking of something good to eat.

It is round, red, and tastes sweet.
 What is it?
 An apple.
 I am thinking of something good to drink.
 It is white.
 What is it?
 Milk.

WHAT TO DRINK

We need something else besides food. What is it?

We need something to drink.

What kinds of drink can you think of?

Water, milk, cocoa, tea, coffee, beer.

The first three are good for you, but the others are not.

STORY OF CARL

Let me tell you a story of a little boy who drank one of the bad drinks.

Carl's father was dead and his mother had to go out to work every day.

When Carl went home from school at noon, his mother was not there to get his dinner, so Carl had to get his own.

The little boy earned some money selling papers every day.

Because he had seen some men drinking beer with their dinners at noon he thought he would have some.

He spent five cents for a mug of beer, and took it home to drink, while he ate the bread and sausage which he found in the pantry.

After awhile he liked the beer better than the bread and sausage.

Carl had always been a strong, healthy boy, and as bright and pleasant as could be. But before long the teacher noticed that he seemed sleepy and stupid in the afternoon.

He lost the roses from his cheeks and seemed sickly and fretful.

One day the teacher found out that Carl's mother was away from home all day.

She called Carl to her and asked what he had for dinner.

He told her about the beer.

The teacher knew then why Carl had changed. She told him that beer may make a boy dull, and keep him from growing tall and strong.

Carl promised that he would not drink any more beer.

The teacher arranged with the mother of one of her other pupils to give Carl a good dinner and a big glass of milk to drink every day.

It was not long before Carl became strong and pleasant again and was able to get his lessons.

But never again did he taste beer.

SENTENCES

We eat many kinds of food.

Rich food is not good for us.

We have potato and meat for dinner.

I have bread and milk for my supper.

Beer is a bad drink.

DRAWING LESSON

Let us draw some of the fruit and vegetables of which we are fond.

Let us first draw a vegetable which we eat with meat. What is it?

Show a potato and draw.

to and draw.

After this draw some kind of fruit—an apple or orange.

AUTHORITATIVE QUOTATIONS

ALCOHOL IS NOT A FOOD

Alcohol is not a food. It makes neither bone, brain, blood, or muscle. On the contrary it acts as a poison and an irritant.—V. N. RUTHERFORD, M. A.

BEER AND WINE ARE NOT FOODS

Grain and grapes are nourishing, but beer and wine are not. The useful elements have disappeared; they have been partially transformed into alcohol. Beer is not "liquid bread." If it is agreeable to the drinker, it is because it contains the alcohol to which he is accustomed.—DR. BIENFAIT of Liege.



Carl had a good dinner with his little playmates.

FOOD

SECOND YEAR

EARLY knowledge of what food does for the body is necessary, that the child may choose what is best for his body, instead of eating only for the momentary gratification of his sense of taste.

FOOD OF ANIMALS

Do animals go to bed early or late? What is the first thing they try to get after waking?

Please tell me a few things that animals eat.

Why does the farmer give his animals only wholesome foods? Why should you eat only wholesome foods?

FOODS FOR CHILDREN

Tell me what you like to eat. (Write the list on the board.) If an unwholesome food is mentioned, pass it by. Speak of the special value of each food. If candy is suggested, write "pure candy." Suggest that the children make molasses candy at home, or buy the variety known as Christmas candy.

The best time to eat candy is after the noon meal. Only a few pieces should be eaten at one time.

FOODS FOR EACH MEAL

Some foods are better suited for breakfast, others for dinner, others for supper.

We will play we are going to get breakfast for a family. You may tell me what we shall give them. (Write two breakfast menus on the board.)

What shall we give them for dinner? (Write two dinner menus.)

What shall we give them for supper? (Write two supper menus.)

We should eat less meat in summer than in winter. Once a day in summer is often enough for most people. One should eat less hearty food at night than earlier in the day.

MODERATION IN EATING

In order to be strong, we need to eat enough but not too much food.

How do we know when we have eaten enough? Sometimes mother knows better than we do.

A very good rule is to leave the table when you can still eat a little more. In a very few minutes you will feel that you have had enough.

CHEWING THE FOOD

If you were working as fast as you could, would you like to have some one urge you to work faster? That is what you are doing to your stomach when you eat fast. You make the stomach work faster than it ought.

We need to chew our food thoroughly.

THINGS TO REMEMBER

Our bodies need food to make them grow. We should give them healthful food.

We should not make the stomach work too hard.

We should eat slowly.

FOOD REPAIRS THE BODY

Animals know what is good for them. Do children always know? Who can tell them?

You learned a little while ago that tools wear out with use, but that your body lasts as long as you live.

This is because it is always being repaired. Each little bit of worn-out matter is carried away and a new bit comes to take its place.

Suppose you had a sled given you at Christmas; a very good sled, but after you had used it for some time it should need new runners.

Would you choose strong wood and iron, or that which would be likely to break?

If your mother needed to put a new sleeve in your coat, would she use poor cloth?

INDIGESTIBLE FOODS

If you give your bodies unwholesome food you will make them weak. (Before giving this lesson, if possible, have a ripe and an unripe apple, a raw and a baked potato passed from child to child, asking them to look for differences between the ripe and unripe, cooked and uncooked specimens.)

Which does your stomach like the better, the ripe or unripe apple? The raw or baked potato?

It would have hard work to make use of the unripe apple or the raw potato.



Fresh, ripe fruit is good for me to eat.

Do you think pickles are very good for the stomach? Why not?

Why is orange peel not good for it?

I will tell you why heavy bread and cake are not good for the stomach. (Be sure that the children know what heavy bread is.) Heavy bread and cake are like glue in the stomach. It can not separate them into small bits easily. It gets tired trying to do this, and you feel tired, too.

Unripe nuts make the stomach work too hard.

If you go into the country to gather nuts, you should not eat them while they are green.

A man would not give his horse or cow such hard food that the animal's stomach could not use it.

You are treating your stomach badly when you give it green apples or any hard, tough food. The stomach can not easily take care of such things.

They can not make you strong and well.

Sometimes they make you sick, or you have the stomach ache.

Your stomach is friendly to you when this happens. It is all the way it has of saying, "Do not give me that kind of food again."

The stomach needs some sugar, but often-times children and even grown people give it too much.

Is it well to eat candy early in the morning? When is the best time?

Cheap candy often looks pretty when you see it in the window, the colors are so bright. The people who make it try to have it look pretty. They know every one likes bright colors, and they think if their candy looks pretty it will sell.

Candy that is very bright colored is usually made of cheap, unwholesome things. That is why you can get so much for a little money.

BLACKBOARD LIST OF FOODS

I have made a long list of foods on the board. I have drawn a waste-basket, too.

We will erase the unwholesome foods and put them in the waste-basket. (Let the children vote under your direction regarding the value of each. Have candy and cheap candy written in the list, ripe apples and unripe apples, etc.)

THINGS TO REMEMBER

Unwholesome food will not help make me grow. Animals do not eat unwholesome food.

Green nuts and unripe fruits are unwholesome.

Too much candy and cake are unwholesome.

AUTHORITATIVE QUOTATIONS

WHAT FOOD DOES FOR THE BODY

The processes of life in the body have the following divisions: first, the governing portion, the brain; second, the executive portion, the muscular system; third, the fuel portion, which keeps up the supply of heat, the source of all activity and motion.

Food must supply these three great divisions (vitality, strength, and heat) of the process of life in the proper proportion, or something will soon go wrong, though nature allows a wide margin.—*Journal American Medical Association*.

DEFINITION OF A FOOD

A food is any material substance which, when taken into the body, will supply the needs of the body for that particular substance without injury to the structure or functions of the body.—JOHN MADDEN, M. D.

ALCOHOL NOT A FOOD

The work of experimental science has conclusively demonstrated that when alcohol is drunk in quantities sufficient to produce any noticeable effect, both physical and mental capabilities are decreased.

If alcohol were substituted for the necessary fat and carbohydrate food, to give heat to the body, the quantity containing the heat equivalent of the fat and carbohydrate food would speedily produce fatal alcohol poisoning. Alcohol, therefore, can not be considered a food.—JOHN MADDEN, M. D.

SPICES AND CONDIMENTS UNSUITABLE FOR CHILDREN

Children who use spices and condiments are more likely to become addicted to alcohol and drugs than those whose diet is devoid of those stimulants.—*Alkaloidal Clinic*.

I heard the bluebird singing
To robin in the tree.

"Cold winter now is over
And spring has come," said he;

'Tis time for flowers to rouse from sleep,
And from their downy blankets peep;

So wake, wake, little flowers,
Wake, for winter is o'er,
Wake, wake, wake,
The spring has come once more.

—HELEN C. BACON.

FOOD

THIRD YEAR

NAPOLEON is said to have lost one of his greatest battles from an attack of indigestion. If the teacher could know the facts, it is probable that she would find a poorly cooked or hastily eaten breakfast the cause of many a school failure.

In the upper grades of many schools cooking is now taught as thoroughly as any other science, and with gratifying results; but bad habits in eating and drinking may be formed in the earliest years of child life unless the primary teacher solves the problem of their prevention.

Tactful suggestion to the parent as opportunity offers may do something to improve matters, but the more hopeful side of the work is with the little ones themselves.

The desire to grow tall and strong, to surpass one's mates on the playground is part of the child's nature. We have only to show the relation of food to strength and growth to arouse his interest in these matters and get his co-operation.

Suggestion. Measure heights of the children at recess, a few each day. Measure again a few months later and let each child estimate how much he has grown.

FOODS NEEDED FOR GROWTH

How many boys have ridden on a grocery wagon? How many girls have watched the grocer's man go from house to house?

What did he leave?

Is there any home that never gets food?

What part of your body receives the food after you swallow it? The stomach digests the food that you swallow, that is, it makes it so fine and so soft that the particles can be carried to all parts of your bodies.

Different parts of our bodies need different kinds of food. If we give those kinds to the stomach, the food each part needs is carried to it.

Is your body as small as it was a year ago? Why not?

What three things have made it grow?

We will talk about food today.

Please tell me what foods you think will make you grow, and I will write the list on the board.

Get from the children meat, eggs, fish, and milk. If other articles are named, tell them we will use them in another group.

FOODS NEEDED FOR WARMTH

When it is cold you wear thick clothing. Does it make your body warm? No, your body is made warm by the heat inside it.

When you wear thick clothing, less heat can escape than when you wear thin clothing. Since most children believe that the *clothes* they wear make them warm or cool, it would be well to ask if clothing would make a stone warm.

What does your overcoat do for you in winter?

Does it make you warm, or keep you warm?

Why do you wear a thin waist in summer?

If we wish to warm a room what do we do?

Certain kinds of food make heat in the body. Please name them.

(Get potatoes, oatmeal, bread, butter, cake, etc., from the class.)

FOODS NEEDED FOR MOISTURE

We need watery foods also; what are they?

(Find what

fruits are attainable in your locality, and make a list.)

When we eat shall our meal be wholly of the foods that will make us grow larger?

Shall it be wholly of those that make heat?

Shall it be wholly watery foods?

We need some of each kind every day.

Today we will talk about the most wholesome kinds of food.

Last year you learned what foods animals eat.

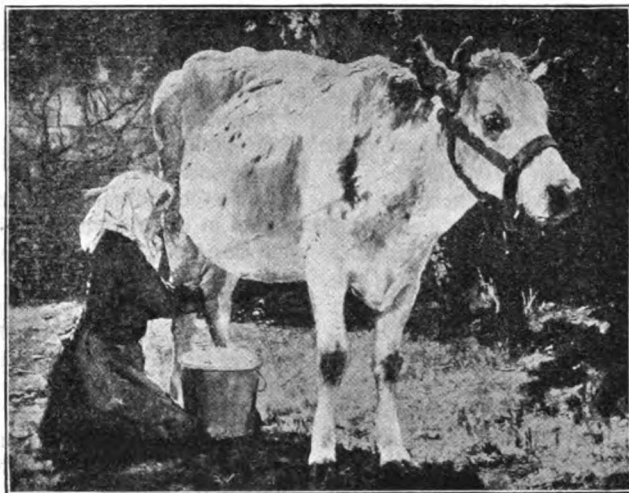
If you were to have a pet animal, which would you rather have, a healthy or a sick one?

What should you do to keep it well?

What should you give your canary bird?

Do you know what would happen if you gave it salt? We need salt, but it kills a canary.

What should you give your cat? your dog? your rabbit?



Rich, creamy milk for every child to drink.

ANIMALS REFUSE HARMFUL DRINKS

If you should offer an animal beer or any drink containing alcohol, would he take it?

Why will he not take it?

Animals do not care for harmful foods or drinks.

If you had a horse and wished him to do a great deal of work each day, would you give him helpful or harmful foods?

It is just as necessary that we should have only helpful foods.

At our next lesson I shall ask each of you to play you are going to order the breakfast, dinner, and supper for the next day, and write the list for me. You may think between now and then what you will write.

THINGS TO REMEMBER

We need food to make the body grow.

We need food to give us warmth.

We need food to keep the body in repair. (Explain.)

We need watery foods.

WHY NOT DRINK ALCOHOLIC LIQUORS

ANSWERS OF SCIENCE TO THIS QUESTION

WHAT IS THE HARM IN A GLASS OF BEER

It is just this precious beer which lowers among thousands and thousands intellectual capacity and will power, and makes them old before their time; ruins stomach, liver, heart, and brain; and brings them into the poorhouse and prison, hospital and asylum, and early puts them under the earth.—MAX GRUBER, M. D., President Royal Institute of Hygiene, Munich.

Even the moderate quantity of alcohol contained in a glass of wine or a pint of German beer is sufficient to paralyze, retard, or diminish brain functions.—AUGUST FOREL, M. D., Professor of Psychiatry, University of Zurich.

DRINK DIMINISHES MONEY-EARNING POWER

Every dose of alcohol, even the most moderate, diminishes strength. All that man asserts of the strengthening effects of alcohol is a delusion. The well known poor man's glass during working hours is beyond question injurious. Every penny which the workman spends for alcoholic drinks is not only wasted but employed for a destructive purpose.—ADOLF FICK, M. D., Professor of Physiology, University of Wurzburg.

The bad effect of alcohol on persons performing muscular work is well known. The evidence is overwhelming that alcohol in small amounts has a most harmful effect on voluntary muscu-

lar work.—VICTOR HORSLEY, M. D., F. R. S., Professor of Clinical Surgery, University College, London.

DRINKING AN INFRINGEMENT OF THE CHILD'S RIGHT TO BE WELL BORN

The children of drinking parents do not inherit a healthy nervous system, but one more or less disordered.—ADOLF FRICK, M. D., University of Zurich.

Out of 10,000 children examined, only 4 % of those free from hereditary alcoholic taint were dullards, and only 18 % suffered from any organic disease; while of those with hereditary alcoholic taint 77 % were dullards, 30 % were very deficient, and 70 % suffered from organic disease.—T. A. MACNICHOLL, M. D., New York City.

ALCOHOL INJURES HEALTH AND SHORTENS LIFE

Liabilities to sickness are greater among drinking men than among abstainers, because alcohol weakens the vitality, lessens the power of resistance, renders the body more susceptible to disease.—ADOLF BAER, M. D., Royal Sanitary Commissioner, Berlin.

Life is considerably shortened by the use of alcohol in large quantities. But a moderate consumption of the same also shortens life by an average of 5 or 6 years.—AUGUST FOREL, M. D., Professor of Psychiatry, University of Zurich.

According to Dickenson, tuberculosis is 3 times as frequent among drinkers as among abstinent people.—*The London Lancet*.

ALCOHOL THE GREATEST ENEMY TO THIS GOVERNMENT OF THE PEOPLE

It is brains that tell in the industrial struggle which is upon us, not brute force merely. And drink muddles brains, fuddles brains, drowns brains, both of the individual and of the nation.—MR. JOHN NEWTON, Faversham, England.

EVEN MODERATE DRINKING IS UNSAFE

Alcohol has the power when taken frequently, even in small quantities, to create a diseased appetite for more which may become uncontrollable.—Statement signed in 1896 by 35 eminent physicians of the United States, to be taught the school children.

In view of the foregoing facts, every vote for license is a vote for that which
 Reduces working ability,
 Shortens life,
 Breeds dullards,
 Creates appetite for itself,
 Endangers the republic.

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SEPTEMBER TO JUNE, INCLUSIVE

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O what a dawn of day!

How the March sun feels like May!

All is blue again

After last night's rain,

And the South wind dries the hawthorn spray.

—BROWNING.

A MESSAGE TO LOCAL WORKERS

THE saloon with its record of crime, broken hearts, and ruined lives is the darkest blot on the fair face of our American civilization. But it is doomed to go.

First, because the use of alcoholic drinks is a relic of an ignorant, barbaric age. That ignorance is dispelled by the investigations of modern science which show that there is not a single argument for the use of these drinks that has any basis in truth.

Before the second co-ordinate proof that the saloon is doomed to go we stand with reverent awe, for it shows God's purposes of mercy to our land. It is this:

As the testimony of science has poured in its light, proving alcohol to be, not a good creature of God designed for human comfort, but a subtle, destructive poison that is always, in small or large quantities, a dangerous beverage at war with human well-being, the legislatures of this country have enacted laws providing that all the people shall know these facts through the education of all the children in the public schools. The legislatures have done their part. Science has done its part and is constantly adding to its testimony against even the most moderate use of alcoholic drinks. The Bureau of Scientific Temperance Investigation has done its part in collecting and translating these findings of science into simple language adapted for incorporation into school text-books on physiology and hygiene for all grades of pupils in our public schools. An ample school literature is ready.

It now remains for the temperance people to

do their part in insisting upon the full enforcement of these temperance education laws. If they do, the final going of the saloon is not far off.

Only the ballots of a majority of the voters can close the American saloon. But men will not vote to prohibit the sale of beverages they believe in and want to drink. Hence, there must first be education as to the evil nature and effects of the drinks the saloon has to sell. How largely can scientific temperance instruction in our public schools reach the future voters and through them the voters of today?

The laws require that physiology and hygiene with special reference to alcoholic drinks and narcotics shall be studied as a regular branch by the pupils in all our public schools.

Each child of these millions of children in our country is every year receiving lessons in the physiological reasons for obeying the laws of health, if the law is properly enforced. Of these lessons about one-fifth are warnings as to the dangerous nature and effects of alcoholic beverages and other narcotics.

Most of these children repeat some part of their lessons at home, and for all these temperance lessons to the children, and through them to the parents, the state pays the bills. By what other instrumentality could so much temperance instruction be given to the rising generations and through them be diffused among the homes and people of your state?

The success of this great movement to train the boys and girls in that sobriety which is already making us one of the most achieving of the great nations must now, as always, depend largely upon the way in which the faithful, consecrated workers in every locality persistently agitate, and constantly follow up the advantages gained in the past.

Let me in this connection pass on to you the personal watchword that has been my guide through all the strenuous years of effort for the temperance education of the children of America:

"What ought to be done can be done by whoever has the courage and the faith to undertake it, for Omnipotence is pledged to such an one."

"If people would only pay as much attention to the rearing of their children as they do to the raising of corn, child culture would soon be reduced to an exact science.

"Let their souls drink in all that is pure and sweet. Rear them amid pleasant surroundings. Put the best in them by contact with the best outside. They will absorb it as a plant does the sunshine and the dew."

Grammar
LessonsFIFTH OR
SIXTH YEAR

BODY HEAT

HISTORY nowhere shows more plainly the quick results to be obtained by teaching the children, than in the story of the Children's Crusade.

The tale is a familiar one. The Holy Land and the Holy Sepulcher had been for many years in the hands of infidels, and five crusades participated in by hundreds of thousands of men and women had failed to wrest these sacred places from the Turks, because, as it was then believed, of God's wrath for the sins of the camp.

About 1212, Nicholas and other fanatical priests went through Germany and France calling upon the children everywhere to undertake the recovery of the Cross and Sepulcher, which their fathers had been unable to accomplish.

Urged by these impassioned appeals, boys and girls to the number of many thousands, although forbidden by their distracted parents, and in some cases even imprisoned, rushed to the standard of the cross, and without money, provisions, or leaders, entered this Holy War, marching many weary miles, and shouting their rallying cry, "Lord Jesus, give us back the Holy Cross," as they journeyed.

Their crusade was unwisely undertaken and it ended disastrously. Some of the children were lured on board ships, carried off to Africa, and sold into captivity, and only a few of the others ever reached their homes. None of them ever saw the Holy Land.

¶ In our country more than 20,000,000 public school children stand before their teachers and await their appeal to enlist in another war more holy than ever Crusader undertook, a war that has been wisely planned, and that is sure to end in victory.

Our land is the Promised Land to tens of thousands who each year leave the old world and come to the new, seeking that precious boon, human liberty. Our liberties are in the

hands of the sovereign people who, by their ballots, may conserve or destroy them. The voters of tomorrow are today in our public schools. The future sobriety of the people and thus the safeguarding of their heritage of liberty depend upon whether the boys and girls listen and respond to the voices which teach the dangers to our country that follow the degeneracy of the individual through the use of alcoholic beverages, or to those other siren voices which, by condoning the moderate use of liquors, undermine the very foundations of personal and civic liberty.

The youth of America are as susceptible to appeals to lofty endeavor as were the Crusade children of old. The laws of our country provide that all the children of the nation shall be taught the nature and effects of alcoholic drinks and other narcotics in connection with physiology and hygiene. To us, as teachers, it is given so to inspire these hosts of boys and girls with a sense of their responsibility to themselves and their country in the matter of right living that in this twentieth century there may be another Children's Crusade which shall win back this land from the unholy power of alcohol.

HOW HEAT IS FORMED IN THE BODY

Before this subject is taken up, let the teacher provide herself with a small bar of iron and a piece of marble or other stone and wrap them up warmly in flannel. She may also ask one of the girls to bring a warmly dressed doll (preferably a china doll) to school. She should procure a clinical thermometer or, if that can not be obtained, a common thermometer that may be unfastened from its metal support.

When the class is called, take the iron and stone from their wrappings, allow the children to handle them, and let some member of the class take the temperature of each and also of the doll. They have been warmly wrapped up, why do they not feel warm?

If there is a hot stove or heater in the room, let one of the pupils hold his hand near it and feel the heat that comes out. Take the temperature of the stove. How is this heat produced?

Now let some child take the temperature of another, placing the thermometer under his tongue for a minute or two. What is the result? Take the temperature of the hand also, and other exposed parts of the body and bring out the fact that the body itself gives out heat whether clothing is over it or not.

Learn from the book what the temperature of the healthy body is. Explain the reason for the differences in the temperature of the marble, the stove, and the body? Develop the point that clothing is worn not to make the body warm, but to keep it warm.

Fire in an engine gives out heat and makes the engine move. How is this like the heat of the body? How is it different?

What is the first thing necessary to a fire? Does the body also require fuel? What is the fuel of the body? How is it different from that of a stove?

If a good fire were started in a stove and all the dampers were closed tight, what would happen? Why will a torch not always burn when let down in a deep well?

Why does not the fire burn so well when the air is heavy?

Explain briefly why burning can not proceed unless there is oxygen (a gas in the air) present.

Help the class to find out what oxidation is. Provide a little coil of magnesium wire and rub it clean with emery paper. Cut it in two and apply a lighted match to one half. Note that it burns rapidly with heat and light and leaves only a little white ash (magnesia). Show later that this ash is now waste matter and can not be burned again. Put the other part of the wire away in a bottle with a few drops of water and note in a day or two the white ash (magnesia) which has collected on the wire. If it is left long enough it will be entirely oxidized.

But in this second experiment no heat was felt, because the oxidation was so slow that the heat could not be detected. Explain that, nevertheless, the same amount of heat was given off in each case.

What happens when a boy leaves his knife with the steel blade uncovered where moisture can get on it? This rusting is another example of oxidation, and there was heat here too, although we could not feel it because it passed off so slowly.

Point out that oxidation may be rapid and accompanied with considerable heat, or slow with little heat, but that when oxidation takes place heat is always generated.

Mention other examples of each kind of oxidation. Of which sort is that in the body? An ounce of food oxidized in the body will produce as much heat as it would if burned outside.

What is left behind after the fuel in the stove is consumed, and what goes up the chimney?

Will a fire once started burn on indefinitely without fresh supplies of fuel? Neither can the body keep up its heat without an adequate supply of fuel. The ashes and smoke of bodily oxidation must be removed constantly and replaced by new fuel, just as the ashes must be frequently removed from a stove.

The two things necessary to oxidation are oxygen and fuel. Food is the fuel which is oxidized in the body and produces heat and motion.

The oxygen comes from the air we breathe.

WORK OF THE BLOOD AS OXYGEN CARRIER.

Oxidation in the body comes from the uniting of oxygen and fuel or food within the tissues.

Learn from books how the oxygen which we breathe into the lungs, and the food which is taken into the stomach can be carried to all parts of the body and have opportunity to unite and be oxidized.

Like the red corpuscles to laborers which carry oxygen in tiny red bags (sacs), and the white corpuscles to so many soldiers who are always on guard in every part of the body to attack every disease germ or other harmful thing which by any chance enters the body. The highways along which they pass are the blood tubes. What composes the serum of the blood?

What remains after the oxidation of food in our bodies? How is this waste disposed of? Learn from books that the skin, lungs, and kidneys are the organs that carry off the waste from the body combustion. How does the use of alcohol affect the excretion of waste?

REGULATION OF BODY HEAT

In what two ways do we regulate the heat of a stove? When do we use the most fuel? What sort of food do the Eskimos eat? People in the torrid zone? What do we eat in the temperate zone? Give reasons for these differences in diet?

Write a list of articles of food on the board. Which of these furnish the most heat and motion? Are any of these undesirable? Why? Find what the books say on this point.

At what time of the year do we eat the same class of food as the Eskimo? the people in the tropics? Why? In which season do we eat the most food?

How do we sometimes cool a room in hot weather? Point out that it is the evaporation of cool water sprinkled on the floor which reduces the temperature. What do we sometimes do when our faces are hot and flushed? What happens when we are very warm? Explain how the skin pours out a great deal of perspiration at such times to cool the body, and gives out only a little when we are cold or only comfortably warm.

There are, then, two ways by which the temperature of the body is kept the same, by taking more fuel or fat-making foods in cold weather and by the equalizing of heat by perspiration. Thus nature makes man capable of enduring great extremes of heat and cold.

Years ago there was a man called the "Fire King" who could go into a red hot oven and stay five minutes. His body heat was cooled by profuse perspiration. On the other hand, travelers in the polar regions endure cold equal to 50 degrees below zero.

Describe briefly the heat received from such outside sources as the sun and from fires, and its conservation by shelter.

By what means does man who must be subjected to many extremes of heat and cold adapt himself to these changes of temperature?

CLOTHING

Have the pupils write lists of the principal animals in very hot countries, of those found in the temperate zone, and those in the far north.

What sort of covering have the bodies of animals in hot countries? Do they have thick fur? Why are the hides of elephants and some other animals very tough and strong? What sort of clothing do the people of hot countries wear?

What is the nature of the covering of the arctic animals? How do the Eskimos dress?

Is the fur of animals in the temperate zone as heavy as that in the cold regions? Compare the coat of a horse or dog in the summer and in the winter. Tell how they change their clothes from thick to thin.

Let one pupil write upon the board a complete outfit of clothing suitable for a cold winter day, another, one for a very hot summer day, a third, one suitable for a rainy day, and a fourth, one for vigorous play.

From what source do we get cotton and linen? Where do they grow? For what kind of weather is clothing made from such material most suitable?

Where do our silk, wool, and fur garments come from? For what weather are these most suitable? Point out that woollen garments and fur are not good conductors of heat, and therefore keep the body heat from escaping.

Where do our rubber boots and rain coats come from? Why not wear these in the house?

To what are we indebted for our shoes, our kid or leather gloves? Why do we wear shoes in summer, and heavy gloves when we have to do rough work?

What would happen if the body were exposed directly to the rays of the hot summer sun? Why is it necessary in hot weather to wear hats and perhaps also protect the head further with a sunshade?

EFFECTS OF ALCOHOL ON BODY HEAT

Probably none of the delusions as to the beneficial effects of alcoholic beverages have been more widespread than the two diametrically opposed to each other, that alcohol enables the body to resist cold in winter and prevents overheating in summer.

The teacher should be very careful to emphasize the point that to take alcoholic beverages before going into the cold is to throw away a part of the body heat for which there is now unusual need.

Tell the story of the adventure of a number of travellers who were caught in a snowstorm in the Sierra Nevada mountains. They were exposed to great cold, and before lying down to sleep several took large quantities of alcohol which made them feel warm and comfortable. Others took a little. Part of them took none and went to sleep feeling chilly. In the morning those who took a large quantity of alcohol were frozen to death; those who took a little were frost-bitten; but those who took no alcohol suffered no serious results from the exposure.

Discuss this story and similar ones which pupils may be able to give, and make it clear how alcohol sends the blood to the surface of the body where it is quickly cooled, thus cooling the body.

Bring out also the fact that alcohol by lowering the resisting power of the body makes it less capable of resisting extremes of heat.

Discuss the authoritative quotations, and from them and books learn how alcohol, by damaging the blood corpuscles, lessens oxidation, and predisposes to disease.

AUTHORITATIVE QUOTATIONS

In the larger cities of this country the cases [of sunstroke] are almost exclusively confined to workmen who are much exposed, and at the same time have been drinking beer and whisky.—OSLER *in Practice of Medicine*.

Drink is certainly the most powerful predisposing cause of the development of the symptoms of sunstroke.—SURGEON PARKE, Med. Officer of the Emin Pasha Relief Expedition.

Purity of blood encourages health; its impurity encourages disease. Whatever lessens the normal amount of oxygen cripples the functions of the body in its attempt to secure a restoration to health.

The microscope reveals that under alcoholic influence the red corpuscles of the blood become corrugated, shriveled, adherent to one another, and incapable of conveying their normal amount of oxygen. The blood being incapable of conveying its normal amount of oxygen, it is not difficult to recognize that the diseased system will suffer greatly from the lack of material which has a profound effect in vitalizing the tissues and aiding the natural functions of the various organs.—J. W. GROSVENOR, M. D.

The blood owes its beautiful red tint to millions of microscopic discs. The red matter with which they are charged in passing into the lungs absorbs the air that has been inhaled, and transports it everywhere. But alcohol encumbers this beneficent action, and so intervenes that the dark blood of the veins is not so com-

pletely changed as it ought to be into arterial blood, red and vivifying.

But this is not all. The blood contains other globules which are of the greatest interest. These are white globules. If a thorn penetrates the skin, immediately they flow to that place, surround it, form matter which detaches it, and get rid of it. If a microbe wandering about gets into our organism, immediately the white globules in the vicinity hasten to meet it, struggle with it, and finish by swallowing it.

These few words indicate the important role which falls to their lot in the protection of our health. Alcohol, continuing its perverse action, does not leave them intact. It sends them to sleep, it makes them drunk, and so delivers us without defense to the enemies which lie in wait for us.—DR BIENFAIT, Liege.

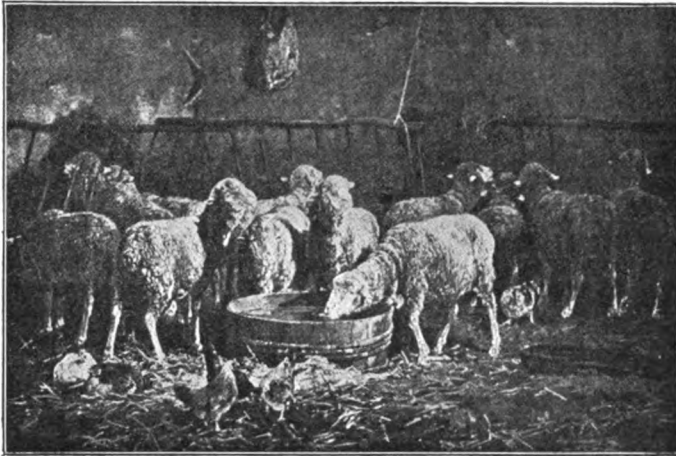
When venous or impure blood reaches the lungs, heavily laden with exhausted, worn-out material, or fatty matter, it meets with the air which has been taken in by the windpipe. This air parts with its oxygen, which unites with the carbon and hydrogen of the waste

and fatty matter in the blood, purifying it and fitting it for all the purposes of nutrition.

Now let us send an inordinate amount of peculiarly combustible material, alcohol for instance, from the stomach to the lungs, along with all the waste that naturally falls in with each circuit of the blood.

What do we observe? We find that the oxygen of the air has a greater affinity for the alcohol than it has for the waste material, and if a liberal quantity of alcohol has been taken, more than an ounce or an ounce and a half in twenty-four hours, the whole, or a great part of the oxygen is consumed by it, and the impurities in the blood, which should be consumed or changed by the oxygen, go on unchanged, and we have impure blood circulating through the arteries and capillaries.—FLINT'S *Practice of Medicine*.

"No man can try to help another without helping himself."



Water is the best drink of all.

remember about the animal kingdom and the domestic animals that belong to it. You have named all the domestic animals but one. Who can tell me what that one is? It has bristly hair, likes dirt, and is fond of getting into the mud."

Miss Fanny looked expectantly around the room. "Can't you think, Tommy?" she asked, encouragingly.

"Yes'm," was the shame-faced reply. "It's me."—*Tit-Bits*.

WHY THEY MEWED

Philip had gone to bring in the new kittens to show them to a visitor. His mother, hearing a shrill mewing, called out: "Don't hurt the kittens, Philip."

From the hall came the reassuring answer: "Oh, no. I'm carrying them very carefully by the stems."—*Union Signal*.

MARCH

BY E. K. STEVENS

O H the tossing of the branches,
The living, budding branches
High in air!

And the sun that shines so brightly,
The shadows dancing lightly
Everywhere.

The gurgle of the water,
The laughing, sparkling water
Flowing by;

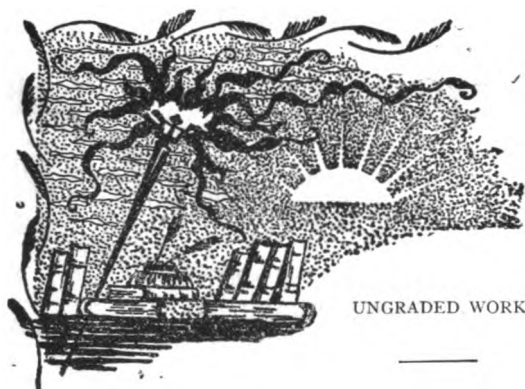
The wind—a thrill of vigor,
Now a roar of winter rigor,
Now a sigh.

Above, the blue sky leaning,

Brightly shining, full of
meaning.
Perfect arch!

Breezes bracing, dry
leaves chasing,
Wind-tossed branches
interlacing,
This is
March!

"Now children," said the teacher, "let us see what you



PHYSIOLOGY IN UNGRADED SCHOOLS

BY ELIZA MOWRY BLIVEN

THE object of the public schools is to promote intelligence and make good citizens. Most intelligent people know that drunkenness is the main cause of crimes, poverty, and bad citizenship, and that it also breeds many diseases, miseries, and political corruption.

Any use of intoxicants tends towards the drunkard's appetite. Many are not aware how the use of tobacco leads to the use of liquors. They are twin evils. And the tobacco appetite is fostered by numerous unhealthful habits begun in early childhood, because mothers are ignorant of physiology and Nature's health laws.

Which is easier and surer, to reform the drunkards, or to prevent people from becoming drunkards and criminals? Since it is almost impossible to reform those who have used liquor or tobacco for many years, the way to diminish their use is so to teach the young as to prevent their forming these habits.

In cases where the father is a hard drinker, he may think it is smart to coax his little ones into drinking and smoking. His conscience is too seared, or he is too ignorant to teach them what he ought, hence right instruction must be given in the public schools.

Where physiology is well taught, the children learn what each organ in their bodies is for; how healthful foods, air, water, exercise, etc., make them grow strong; how to take proper care of themselves in order to keep healthy; and why alcohol, tobacco, and other narcotics harm people. Thus forewarned, the children choose to avoid tobacco and intoxicants with all their dire results.

Physiology, well taught in the schools, means much besides the prevention of drunkenness. After the girls leave school many will become wives of laboring men and mothers of the next generation. Their work will be largely cooking, cleaning, and guiding the family to prevent

filth and disease, and trying to develop in their children good habits, healthy growth, and all the qualities that make for good citizenship.

Will a thorough knowledge of arithmetic, geography, and grammar, or physiology be most useful to those girls after they leave school? Physiology will help them constantly; but much that they learn in other studies will never be used and will soon be forgotten.

Physiology, to prevent disease and the formation of bad habits, is necessary to boys, because health is essential to success in every kind of business and in every walk in life.

If arithmetic or geography were taught only once a week it would be largely a failure. So with physiology. It should be taught every day. But the crowded teacher exclaims: "Oh, I haven't time for another study. Parents want those we already have."

But the future success, happiness, safety, health, character, usefulness of these pupils, and the welfare of the nation require the physiology lessons. Teach a little less arithmetic, if need be, and give physiology ten minutes every morning *before* the arithmetic lessons; and twenty years hence your pupils will look back to these physiology lessons as the most valuable and helpful of all their school course.

Do you wonder how it can all be taught in ten minutes a day? Divide your school into five grades. Place one physiology topic on the board Monday morning for the whole school the entire week. Monday teach the youngest grade children something on this topic which they can understand.

Tell the second grade where they can find something more on this topic in their little physiologies and learn it to recite Tuesday morning.

The third grade must hunt up something else on the same topic in any physiology, with or without the teacher's help, which the lower grades have not recited, for their Wednesday's recitation.

The fourth grade must hunt for and recite Thursday morning whatever they can find in all physiologies obtainable that the lower grades have not recited.

For Friday, the most advanced pupils will not want to be outdone by the younger ones, so they will hunt in physiologies, cyclopedias, health journals, or temperance works, in order to recite something which has not been given by any of the rest. Thus each grade must listen to the lower grades, thereby taking a thorough review, as well as learn a little in advance, to recite quickly within the ten minutes.

I believe this method will make physiology the most interesting, exciting, and thoroughly

learned study in school. A new topic each week would divide the subject into forty topics in the year. The next year the oldest pupils leave school, and the rest are advanced one grade, so the same topics will be appropriate each year.

This course is planned for our ungraded country schools. If all country school boards would introduce this method into their schools I feel sure it would promote the general welfare of all classes of people. Teach physiology rightly to all the children, and through them to all the fathers and mothers, and it will make total abstinence popular; then the saloon business will be given up for lack of customers.

A SPRING AIRING

BY MARTHA BURR BANKS

All the good little kittens have washed their mittens,

And hung them up to dry;

They're gray and fluffy, and soft and muffy,

But it's time to lay them by;

And now that we've come to the spring of the year,

They have them all out airing here;

And that is the reason, I do suppose,

Why this little tree that every one knows,

By the name of Pussy Willow goes.



"The people of tired cities come up to these shrines to pray;
God freshens again within them as He passes by all day."

A little girl came running to her mama with the announcement that her stomach said it was dinner time.

"Perhaps you had better go and see what the clock says, my dear."

After some study, "Mama, that clock says my stomach is ten minutes fast."—*Journal of Education*.

"Dame Nature, with maternal pride,
Her plans has made.
She'll soon awake from out the dream—
Spread o'er the land a beauteous sheen,
With hill and vale in verdant green
Arrayed."

An Irishman who was not feeling well dropped in to consult a physician. The latter began operations by feeling the patient's pulse.

"Phwat's the good of feeling me wrist, doctor," said Pat. "Sure, and it's in me stomach the pain do be."—*Chicago News*.

"The real test of education is not found in doing again what one has done, but in what one does in *new* situations. Education is the power of effective accommodation rather than of habitual adjustment."—JOHN A. KEITH, State Normal School, De Kalb, Ill., in *School News and Practical Educator*.

BOOK NOTICES

THE SALOON PROBLEM AND SOCIAL REFORM, by John Marshall Barker, Ph. D., Professor of Sociology in the School of Theology, Boston University. Everett Press, Boston.

It is a long time since we have seen an abler or more judicious discussion of the saloon problem, and we know of no recent book that gives so wide a range of accurate and authoritative data in such a compact, well written, and withal intensely interesting form.

From the chapter in which Professor Barker states the problem as not a question of the individual's personal liberty to drink, but of whether the saloons as a social menace shall be maintained or suppressed, through the chapters dealing with the economic, political, social, and criminal aspects of the question, we have a vivid panorama of how the saloon robs the laborer and tax payer; strikes at the very roots of our political liberties through bribery and corruption, endangers the institutions upon which social life depends, by destroying the home, circumscribing school privileges and nullifying church influence; and directly and indirectly is the "chief breeder of lawlessness" and anarchy.

In these chapters he has marshalled all the forces of the saloon, told them by rank and file, and enumerated their strength.

In the eight chapters following he has placed in battle array the mighty forces of active Christian altruism. He makes it clear that the heaviest battalions are on the side of the temperance hosts, and that even now the liquor traffic is engaged in a hand-to-hand conflict for life itself.

His discussion of church unity, legislative action, formation of public opinion, and law enforcement presents an epitome of the best and most successful methods evolved from long experience.

To scientific temperance instruction he pays the just tribute that it "is gradually changing the social customs for the better. The good fruits of this work are in evidence. Those who will remove the bandage of ignorance and prejudice from their eyes regarding this work can not fail to discover that it will greatly undermine the foundations of the saloon system."

Busy people in every walk of life, writers and public speakers will find in this inexpensive little book just what they have long been seeking, and to all temperance workers it would seem to be indispensable. Temperance organizations should see that it is added to their libraries and freely circulated, and also that all public libraries are supplied with copies.

THE GIFT OF GOD. A temperance service arranged by Rev. W. C. Martin and E. S. Lorenz. 5 cents each, 50 cents a dozen.

A complete and interesting exercise suitable for schools, Sunday schools, and temperance meetings of any kind. It includes songs, duets, exercises for children, and readings which should make up a pleasing and easily prepared program.

INTOXICANTS AND OPIUM IN ALL LANDS AND TIMES, by Dr. and Mrs. Wilbur F. Crafts and Mary and Margaret W. Leitch. International Reform Bureau, Washington, D. C. Cloth, 75 cents; paper, 35 cents, postpaid.

This volume of 288 pages, printed in clear type upon good paper, and embellished with 100 pictures and maps furnishes a unique arsenal of weapons to the clergyman, reformer, or layman who desires to know and use the freshest materials available from a worldwide view of the use and effects of alcoholic liquors and opium among the childlike races of the earth, including those of Japan, China, the Philippines, and our territorial possessions. In addition to the recent statements of more than 100 missionaries and travelers, it includes a consideration of the newest temperance questions in civilized as well as savage races, devoting some 30 pages to a study of the army canteen, the testimony of military and civil officers against it, and the important experiments by the British army in the line of total abstinence. Speakers and writers will also find the brief history of the temperance movement from ancient times to the present very useful and interesting.

The attention of our readers is called to the fact that bills for the *SCHOOL PHYSIOLOGY JOURNAL* are sent to subscribers only. No one who has not ordered the *JOURNAL* need fear that he will be called on to pay for it. If the *JOURNAL* comes to you regularly and you have not ordered it, it is being sent to you through the courtesy of some friend who wishes to provide you with its help in your school work. All subscriptions, if not renewed, are discontinued as soon as they expire.

PHYSIOLOGY TOPICS FOR MARCH

PRIMARY—Parts of the Body Necessary to Life: Head; Trunk. Food. Table Manners. Beer, Wine, Cider. Bones. Aids to Growth. Correct Position.

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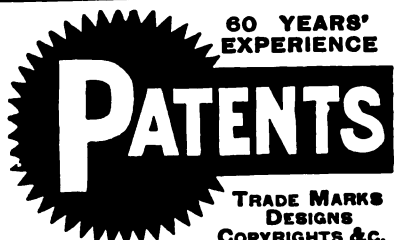
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MARY H. HUNT, EDITOR

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It is a reproduction of the fine photograph of Mrs. Hunt which appeared on the first page of the Dec. 1904 JOURNAL. We hope many of our readers will avail themselves of this opportunity to secure one of these excellent pictures of the leader of Scientific Temperance for their local schools.

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School Physiology Journal

Vol. XV

BOSTON, APRIL, 1906

No. 8

THE AWAKENING

BY CHARLES C. B. ROBERTS

D AFFODIL, lily, and crocus,
They stir, they break from the sod,
They are glad of the sun, and they open
Their golden hearts to God.

We, scattering troops and kindreds,
From out the stars wind-blown
To this wayside corner of space,
This world that we call our own,

We, of the edge-rows of Time,
We, too, shall divide the sod,
Emerge to the light and blossom,
With our hearts held up to God.

THE SCIENTIFIC PERIOD OF THE TEMPERANCE MOVEMENT

BY FRANK WALDO, PH. D.

Former Assistant Astronomer of Harvard University, and later
Official Member of the Weather Bureau, Washington, D. C.

IT has frequently happened that great moral and social conflicts have taken place without the importance of the fight and the methods employed becoming generally known even to some in the very field of battle. Perhaps no stronger example can be mentioned than the fight which is being waged against the use of alcoholic compounds as beverages.

Comparatively few persons who have not been in direct touch with the later stages of the work know what has been and is being done by those who have at heart the lessening of the evils due to the use of alcoholic liquors.

TEMPERANCE AT FIRST A MORAL UPRISING

The temperance movement is of course nothing new, and the tide of sentiment against rum which swept over this country three-quarters of a century ago must be regarded as the beginning of the most wonderful of all the moral uprisings which have taken place in America. It was indeed a moral epidemic, but it was only a phase of the movement as a whole which has passed through several wholly distinct stages—although with but a single object.

Previous to about 1830, the use of alcoholic beverages was common in all grades of society. Then, for thirty years, the gospel of temperance was everywhere preached and accepted with the same earnestness as religious beliefs—in fact it became a religious doctrine. People were

arrayed either for or against it,—there was no lukewarmness.

But science had not yet dispelled the notion that alcohol will help men bear the stress and strain of conflict, hence the outbreak of the War of the Rebellion played havoc with temperance principles and was most distinctly a period of relapse.

At the close of the war, strong adherents to the cause of temperance felt that drastic measures alone could bring about a reaction, and the temperance lecturer entered the field. The fear of the awful consequences of the rum habit was the main appeal, and the famous Black Valley Railroad stretched its haunting lines into the remote corners of the land. Temperance societies sprang up, and the times of 1830 were repeated.

THE WOMAN'S CHRISTIAN TEMPERANCE UNION

But a new and distinct period was being entered upon in which the women of the nation were for the first time to unite in the suppression of a great moral and social evil. Instigated by women of strong personalities, and abetted by many of the clergy and lay religious workers, crusades were inaugurated against the purveyors of liquors.

The results accomplished revealed to the American women the power that lay in concerted movement, and the Woman's Christian Temperance Union was born.

Just as the first temperance movement appealed to the common sense of the people regarding the betterment of their physical condition, so this was a moral and spiritual movement, and its influence has continued on that basis up to the present time.

Still a third phase, which may be designated the intellectual or scientific period of the temperance movement, was slowly being developed. Since it is the latest and inherently the most important of the temperance movements, and is least known, a somewhat detailed account of its development is in place.

STUDY OF THE NATURE AND EFFECTS OF ALCOHOL

The question as to the inherent qualities of alcohol arose as a natural consequence of scientific inquiry. The matter is primarily one for the scientists to decide through careful investigation, but if it is to be of value to humanity it can not end with a statement of analyses and immediate effects of alcohol on the human system.

The information that must be acquired to consider properly the alcohol question must come from specialists in a dozen different lines of scientific inquiry; and when it is remembered that investigators who are working along the same lines frequently do not agree in their results and still more frequently do not agree in their interpretation of the same results, it will readily be recognized that it is not an easy task to reach conclusions which bear the stamp of absolute truth.

A GREAT LEADER PROVIDED

It is one thing to sift out the real facts from the mass of scientific testimony; it is quite another thing to place these facts before all the people. Strangely enough it has fallen to the lot of one woman to be instrumental in accomplishing both tasks, and when I mention in this connection the name of Mrs. Mary H. Hunt of Boston, all who are familiar with the story of the temperance movement during the past twenty-five years will agree that to her initiative and continuous endeavors are due the marvelous accomplishments in both these lines of development and the present advanced condition of the movement as a whole.

From time to time, in the intellectual history of our nation, there have come into prominence women who, by reason of natural mental endowments assiduously cultivated, have taken their place with the foremost men of their times. Such a woman was Maria Mitchell; and such a woman is Mary H. Hunt.

No judge of such matters can talk with Mrs. Hunt for a quarter of an hour without recognizing the marked scientific bent of her mind and its analytical and philosophical strength. If Mrs. Hunt had not taken up the alcohol question as her life work, she would have attained eminence in some other line of research to which her energies might have been bent.

HER PREPARATION FOR THE WORK

The telling of the story of the development of this movement requires a brief mention of Mrs. Hunt's preparation for her work.

She was for some years a science professor in an eastern college where she made a speciality of chemistry. It was during the years 1872-76, when her talented son, Alfred E. Hunt of aluminum fame, was a student in the Massachusetts Institute of Technology, that Mrs. Hunt, while carrying on chemical studies with him for his guidance and encouragement, was led from the study of alcohol as a reagent to an investigation of its origin, nature, and particularly its effects on the human system as disclosed by scientific research.

She studied the work of European investiga-

tors, particularly that of Dr. B. W. Richardson, and reached the conclusion that there was a scientific basis for the movement against the use of alcoholic liquors as a beverage.

That this information should be collated and put into proper form for presentation to the American people became impressed upon Mrs. Hunt's mind, and it slowly dawned upon her that not only did her own equipment make it possible for her to undertake it, but there came the settled conviction that it was a duty to enter upon this work. This "call" came to a woman of Mrs. Hunt's perception and education just as it comes to the physician to spend his life in ameliorating the distress of humanity, or to the scientist who studies psychology or sociology to advance man's knowledge of man.

Mrs. Hunt's studies convinced her that alcohol must be treated as a drug and a poison, rather than as a food, from the beverage point of view. It was then an imperative duty to warn in the light of the best scientific research those who used or who might become habituated to its use.

THE SCHOOLHOUSE TO DECIDE THE TEMPERANCE QUESTION

She became convinced that the only way to disseminate this knowledge widely was to have taught in the schools the facts regarding alcohol and its physiological effects in connection with physiology and hygiene.

A series of articles in the *New England Journal of Education*, bearing the title "The Schoolhouse to Decide the Temperance Question" was the opening volley in the fight, both aggressive and defensive, which she has waged for nearly thirty years in order to accomplish what may justly be regarded as her life work, namely, the enactment of state laws making instruction concerning alcoholic liquors and their physiological effects compulsory in public schools throughout the United States, and more, the arousing of a sentiment in other countries that will, unquestionably, result in the extension of these laws throughout the civilized world.

Mrs. Hunt, very early in her studies of alcohol, became convinced that while the moral appeal might reclaim many toppers, yet that the common usage of alcoholic beverages had given rise to a popular misapprehension as to the harmful and even dangerous character of alcohol in small quantities, and the fact that the habitual even though moderate use of alcoholic drinks sufficed to create an uncontrollable appetite for it similar to that aroused by the recognizedly dangerous narcotics.

If the facts regarding alcohol could be impressed upon the young before they became addicted to the use of alcoholic beverages, they

would be forewarned of the evil effects, and not only be prevented from falling into the alcohol habit themselves, but also, as they acquired influence, would use it to prevent the habit from fixing itself upon others.

The first school system to adopt Mrs. Hunt's propaganda was that of Hyde Park, Massachusetts, which, in 1878, put scientific temperance on its regular list of studies.

THE DEPARTMENT OF SCIENTIFIC TEMPERANCE INSTRUCTION

Mrs. Hunt realized that something more than a single-handed fight was necessary to accomplish the task of nationalizing her scheme, and she felt the necessity of getting the co-operation of a powerful body of organized workers. Accordingly, in 1879, Mrs. Hunt laid before the Woman's Christian Temperance Union her plan for securing the introduction of the study of physiological temperance into the public schools, and in the following year the society created the Department of Scientific Temperance Instruction in Public Schools, and appointed her national superintendent. Thus was a powerful movement inaugurated; but it remained to carry it out,—truly a mountain of labor.

When Mrs. Hunt began her studies in what may be termed temperance pedagogy, not only was there no required instruction on the alcohol question in any of our public schools, but there was no available text-book literature on the subject, nor any guide for oral teaching. The facts had not been even collected from their various scientific sources.

It devolved upon Mrs. Hunt to collect these facts, to see that they were properly presented in the various text-books, to secure the passage of state and national laws commanding that the teaching of this new phase of science be carried out in the schools, to see that these laws were obeyed, and to meet the opposition that fought the whole work of propaganda from beginning to end, from the fierce onslaught of the liquor dealers to the tacit silence of the sympathizer of social drinking who had not manhood

enough to range himself on the one side or the other.

THE BUREAU OF SCIENTIFIC TEMPERANCE INVESTIGATION

Mrs. Hunt used her scientific training and marked scientific ability in gathering together the necessary material for the proper presentation of alcohol knowledge to students and readers. She had already done much of this work for her own information, but now she was obliged to inaugurate that system of systematic research which she has kept up for a quarter of a century and which has made her in point of thoroughness the first specialist in her department in the world. With her corps of searchers, cataloguers,

and translators it may be said that Mrs. Hunt has brought together the gist of every paper of importance that has been published on this subject; and what is more, she has it available for use at a moment's notice.

This vast accumulation of knowledge has served several purposes. It has kept Mrs. Hunt informed regarding any and all researches on the subject, and she has not only been enabled to keep up with the times, but she has thus had at hand the very latest results to guide her in making her own formative plans which have so advanced the cause of temperance.

This knowledge has enabled her to furnish authoritative answers to questions which come to her in the spirit of inquiry from correspondents, throughout not only our country but the whole world. Such a clearing-house for accurate information regarding alcohol has been a necessity in accomplishing the work which has been carried on. The facts obtained through its agency have been used in backing up every movement for the spread of temperance reform.

PREPARATION OF THE FIRST SCHOOL PHYSIOLOGIES

Mrs. Hunt was obliged to use the knowledge that she had just brought together for the preparation of the first text-books in temperance physiology, and she has used the more recent accumulations in keeping them up to date.



"Love sings, too, 'midst all the pain and strife,
There is no death:
I am the Resurrection and the Life."

Mrs. Hunt experienced more than the usual difficulty in getting suitable text-books for presenting the subject of alcohol in the public schools. Her first disheartening experience was the spending of several thousand dollars in getting books prepared by specialists, but they were unsatisfactory. Finally, however, one by one suitable books were prepared and a systematic school course was built up. Mrs. Hunt did not herself write the books, but she did collect for the authors truths that are found in these books and outlined a course of study which succeeded so well in this country that it has now become international.

SCIENTIFIC TEMPERANCE LEGISLATION

In 1882, no state in the union had a law requiring the teaching of what may be termed the scientific principles of temperance in the public schools; by 1902, the last state had fallen into line and every state required this instruction. This result was unquestionably due to the ability and persistent purpose of one woman—Mrs. Mary H. Hunt—although she effected its immediate accomplishment by utilizing through co-operation the mighty power of that most thorough of organizations, the Woman's Christian Temperance Union, together with the Christian churches. The strong appeal that carried the hearts of influential men, public officials, legislators, and teachers, was, "It is for the good of the children, the future citizens."

Vermont was the first state to enact a temperance education law, in 1882. Other states followed, and when New York (1884) and Pennsylvania (1885) entered the line, the national success of the movement was assured.

But even now that the laws have been passed it requires the utmost vigilance and pressure to keep them in force. Through the Woman's Christian Temperance Union and its ramifications Mrs. Hunt keeps in touch with every school, school board or school committee in the land, and hears at once of any "let-up" or of obstructive action on the part of opponents to the temperance movement. Instantly the repelling forces are marshalled and the enforcement of the law made sure.

ATTACKS FROM THE LIQUOR INTERESTS

One of the greatest difficulties to contend with in this movement has been the continual warfare that has been waged in the liquor interest which sees in the near future the reign of generations of Americans all of whom are taught the alcoholic danger, and the consequent downfall of alcoholic liquors as a beverage.

These liquor partisans have used every force under their control or influence to retard the educational movement, and they have welcomed

with joy the championing of their interests by those who have clung to the view that the social drinking of alcoholic beverages is permissible. The most powerful of these opposing influences was the Committee of Fifty which organized in 1893 and was composed of some of our most eminent educators. They sub-divided into committees and ten years later published a report of their conclusions in two large volumes, "The Physiological aspects of the Liquor Problem."

We can not here consider this report in detail, but in the main it was against the teaching of scientific temperance in the lower schools. Mrs. Hunt has replied to it in a pamphlet printed as Senate Document 171, Fifty-eighth Congress, Second Session. Upon presentation by Mr. Gallinger, it was ordered printed, February 27, 1904.

Mrs. Hunt proved that in the light of the results obtained by the foremost authorities of the world this report of the Committee of Fifty was neither thoroughly scientific nor unprejudiced; and that it did not represent the consensus of scientific and pedagogic opinion.

SPREAD OF SCIENTIFIC TEMPERANCE INSTRUCTION TO OTHER LANDS

European eyes are on our nation to a greater extent than we are inclined to think, and Mrs. Hunt's remarkable work has attracted wide attention not only in Great Britain but on the continent as well. It is impossible in this brief article to give the story of the extension of Mrs. Hunt's propaganda to the old world, but in Great Britain especially it has received the most enthusiastic support.

In February, 1904, upwards of 15,000 members of the medical profession of Great Britain and Ireland petitioned for such compulsory education in hygiene and temperance in their public schools as is now required by law in the United States, and recommended the American Course of Study on this subject, prepared by Mrs. Hunt, to every local school board for immediate adoption. The active committee in this movement is made up of thirty-one distinguished physicians from the universities of Cambridge, London, Edinburgh and Dublin, with Sir William Broadbent, M. D., as chairman; and there is every reason to believe that success will crown their efforts.

In the German nation a new note has been sounded on the temperance question, and it has received a great impetus by the permission given by the Emperor to drink his health in water. The American movement, as Mrs. Hunt's propaganda is designated, has received the attention of German royalty itself, and to Mrs. Hunt has been accorded the pleasure of explaining her work at length to the Empress of Germany

whose interest in the matter has become thoroughly aroused.

THE FINANCIAL SIDE OF THE WORK

In closing this article a word should be added in regard to the financial side of this work. The expenses of Mrs. Hunt's office amount to over \$8,000 a year with the practice of the closest economy. To carry on this work to the best advantage would require an additional \$2,000 a year. With the exception of an annual grant of \$800 [this year \$1200] from the National Woman's Christian Temperance Union, this amount has been raised through the work and personal endeavor of Mrs. Hunt who has served the cause from the beginning, not only without salary but at large personal expense. The charge that Mrs. Hunt has personally profited from the sale of school text-books on this subject is therefore absurd.

Too much gratitude can not be expressed to the large-hearted givers who have responded to Mrs. Hunt's financial appeals in the past. The work has now become a necessity to the system which it has implanted in our educational life; but it can be sure of continuance only when an endowment has been provided. A two hundred thousand dollar endowment could not be better devoted to the work of humanity than by placing the Bureau of Scientific Temperance Investigation on a permanent basis, thus relieving Mrs. Hunt from the burden of its maintenance. With every curtailment of the work of this Bureau, the liquor interests gain a thousand-fold. Loss to the Bureau means a loss to the world; and should its work be permitted to cease, the temperance cause would lose its most powerful ammunition magazine, and the business interests of the country one of their strongest allies—the teaching which leads to the total abstinence habits essential to success.

The New York State Central Committee, which is sending the JOURNAL to all city superintendents, superintendents of villages of more than 5,000 population, and all superintendents and principals of graded schools in New

York State, has added the names of the 113 school commissioners of the state to the already long list of subscribers.

SONG IN WINTER

O'er the hill the plangent west wind dirges;
Deeply shrouded is each meadow way;
Night in day, and day in night time merges
In monotony of white and gray;
Rainbow gold of promise?—not a ray!
Desolation rules with icy sway!



"Rich music thrills the air
From hosts on hosts of shining ones."

Swing, O planets, on your
shining courses!
Bear us past the wintry woe
and pain!
Work your wonder, O ye ver-
nal forces!
Let us hear it throbbing
through the rain—
The old tender and ecstatic
strain;
April and the bluebird back
again!
—(CLINTON SCOLLARD.)

The attention of our readers is called to the fact that bills for the SCHOOL PHYSIOLOGY JOURNAL are sent to subscribers only. No one who has not ordered the JOURNAL need fear that he will be called on to pay for it. If the JOURNAL comes to you regularly and you have not ordered it, it is being sent to you through the courtesy of some friend who wishes to provide you with its help in your school work. All subscriptions, if not renewed, are discontinued as soon as they expire.

A mist of green on the wil-
lows;

A flash of blue 'mid the rain;

And the brisk wind pipes,
And the brooklet stripes,
With silver, hill and plain.
Hark! the bluebirds, the bluebirds
Have come to us again!

The snowdrop peeps to the sunlight
Where last year's leaves have lain;
And a fluted song
Tells the heart "Be strong;
The darkest days will wane,
And the bluebirds, the bluebirds
Will always come again!"

—Sel.



Primary Lessons

FIRST YEAR

CLEANLINESS

LESSONS in cleanliness can not be begun too early, nor repeated too often.

Object lessons are excellent, and the teacher always has the objects before her. Hardly is there a session but soiled hands and faces and tousled hair are in evidence.

With firmness and infinite patience she must insist that no child may stay in the room unless face and hands are clean and hair smooth.

She must talk early and often about baths, about clean clothes, etc.

Children can not of course, take care of long hair, but it is possible to make them more willing to let other people take care of it. In doubtful cases, short hair is a blessing. The teacher's suggestion often produces an immediate effect.

We are sometimes so eager to get cleanliness at any cost that we forget to call attention to the proper place for attending to the toilet. Emphasize the fact that teeth and nails should be cared for at home.

CLEANLINESS IN ANIMALS

When your kitty gets her paws or her fur soiled, what does she do? Tell how she cleans herself.

How does her fur look and feel when she is through washing?

Have you ever seen a bird take a bath? Tell how the bird does it.

What other animals have you seen trying to get clean?

CLEANLINESS IN BOYS AND GIRLS

How must boys and girls always try to keep themselves?

How do the face and hands get soiled? The dust and dirt stick to them.

If you shake your clothes at night when you are getting ready for bed, what comes out of them?

This is not all dust; some of it is bits of the outer part of the skin which rub off.

Look at the skin on the back of your hand or arm. (Teacher lets one or two of the children look through a magnifying glass.)

How does it look?

It is full of little holes.

Let a child put his hand on the blackboard or glass, making a moist impression. What made the hand leave this mark?

It is the sweat or perspiration that comes through the little holes in the skin.

When do you feel the perspiration on your skin?

All the time, whether you feel it or not, there should be moisture coming out of these little holes.

If these holes get filled with dirt, what happens?

We should see that the skin is kept clean.

If we allow perspiration and dirt to stay on the skin, after a while it may smell bad. We should try not to have any odor about us. Why?

WASHING FACE, HANDS, ARMS, AND NECK

How often do you wash your face and hands?

What kind of water should you use when they are very dirty? What else is needed besides warm water?

You should use good, pure soap, like castile. Never use strong soap, nor soap with much perfume. It may hurt the skin and make it sore.

When you wash your face, wash your neck and ears too. (Let the teacher illustrate with a large doll, or, if she thinks it wise, with one of her pupils, being careful to call attention to each point.)

When we wash our hands, what else should we be careful to wash? Do not forget to get the wrists and arms clean. (Let the teacher illustrate this process as she did the former.)

BATHS

Besides washing face and hands, arms and neck, what else is necessary in order to keep clean?

How often do you take a bath?

When do you take it? The best time for a warm bath is at night. It is a good plan to have a bath every night, so that you will be sweet and clean when you go to bed.

How do you take a bath? If you have no bath tub, you can have a basin of warm water and wash yourself all over with a cloth.

Try it tonight before you go to bed, and see how good it makes you feel.

Use only pure soap, and wash it all off afterwards.

Then rub yourself dry with a towel.

You should never take a bath just after dinner or just before going out.

SENTENCES

I wash my hands with soap and water.
Warm water and soap make me clean.
Do you take a bath every day?

GAME

Let each child bring a doll to school, if she has one, and with a dry bit of cloth make believe wash its face, neck, arms, and hands.

The teacher should take special pains to show the children how to care for their teeth. Not only should she show them how to keep the teeth clean, but she should talk to them about biting hard substances, cracking nuts with the teeth, etc. It is at this time that the permanent teeth are appearing, and injury to them means a loss that can never be made good.

THE TEETH

Besides washing the outside of our bodies with soap and water, there are other parts which we must keep clean.

What part can you name? The teeth.

When do you clean your teeth? You should always clean them before going to bed.

Why do we need to clean them? The food that we eat sticks to them, and if not cleaned off would cause them to decay and ache.

What do you use to clean them? A soft brush is best.

How should you brush? Up and down, as well as across. (Illustrate this carefully, and let the children imitate.)

We should clean back teeth as well as front, inside as well as outside.

If you need to use a toothpick, do it in your room at home, and not on the street or at school.

What is the difference in shape between front teeth and back?

Why are the front teeth thin and sharp, while the back teeth are thick and flat?

We bite with the front teeth. We chew with the back teeth.

Our teeth are covered with a thin white coating. If we bite very hard things or crack nuts

with our teeth, what shall we be likely to do to this covering?

If we once break off the hard covering, it never grows on again. What happens then to the soft part of the tooth underneath?

How does a decayed tooth feel? Be very careful not to hurt your teeth.

THE NAILS

What grows on the ends of our fingers? Nails. Why? To protect them.

We ought to let the nails grow to the very ends of our finger tips, but no longer.

It is a good plan to cut our nails once a week. Never bite them. When you bite your nails you spoil their shape.

After playing outdoors in the dirt, how do your nails look? There is dirt underneath them.

They should be carefully cleaned with a nail cleaner. A piece of stiff paper folded to a point can be used for this. (The teacher should illustrate.)

PROPER TIME FOR THE TOILET

Where should we attend to the teeth and nails? Where should we never attend to them?

It is a good habit to do all of this in the morning before breakfast, and at night before going to bed.

SENTENCES

I clean my teeth with a brush.

Do you brush your teeth every night?

Do not crack nuts with the teeth.

I clean my nails every morning.

MY WEALTH

I do not own an inch of land,

Yet all I see is mine—

The orchards and the mowing-fields,

The lawns and gardens fine.

The winds my tax-collectors are ;

They bring the tithes to me—

Wild scents and subtle essences,

A tribute rare and free.

—LUCY LARCOM.



"Plenty of soap and water
Means fewer doctor's bills.
A dip in the tub, with an after rub
Is better than taking pills."

THE COVERING OF THE BODY

SECOND YEAR

IF the child does not early learn to love personal neatness, the chances are that wrong habits will be formed to be a drag upon all his later life.

This is one reason why lessons in hygiene should be given in all primary and intermediate grades. It will not do to omit this teaching until the child is mature enough to understand the whole subject, for these years are the habit-forming period.

In no better way can children be taught good personal habits than by noticing the care taken by nearly all animals to keep themselves clean, and to live regularly and happily.

COVERING OF THE BODY

With what are our bodies covered? How does the skin feel?

It is thicker on some parts than on others. Why?

It is looser on some parts than on others. Why? Find one of these looser parts. Why is the skin looser on these parts?

GAME

Allow as many of the class as possible to stand and represent animals. The first may say, "I am a dog. I am covered with hair, so I do not need to wear clothes."

Teacher, assuming the child is a dog, "When is the covering of your body thickest? Why? "How do you keep yourself clean?"

Child number two, "I am a sheep," etc. The teacher asks questions similar to the foregoing.

COVERING OF ANIMALS

(Speak of the covering of animals not personated by children, and its special fitness.)

Why do animals that live in cold countries have long, thick hair?

Why do animals that live in hot countries have thin, short hair?

COLOR OF DIFFERENT RACES

Do all people have the same colored skin?

Would you like to see all fruits and flowers the same color? We should get tired of them, so we like to see people of different colors.

(By giving this view of the matter the teacher will show consideration for all races.)

SHEDDING OF SKIN

Do animals keep the same covering always?

They get new clothing by shedding the old skin, or hair, or wool. (Illustrate, if possible, with snake or insect skin.) We do not shed our skin whole. It comes off in tiny scales.

Toads and frogs have a queer way of getting out of their skins.

When the frog has outgrown his skin, it splits open, and the frog pushes himself out of it, first the hind feet, then the fore feet. He rolls the old skin into a ball and swallows it.

The toad does the same.

How do we get fresh clothing? You are not old enough to earn the money to buy your clothes. Your father has to do that. You can help him by being careful not to tear or soil them.

CARE OF CLOTHING

When your skin is soiled, what does it need?

There are two other things your skin needs, sunlight and air.

SUNLIGHT AND AIR

How many know what happens to a plant that has been kept in the dark?

If you were kept entirely away from the sun, your skin would be pale instead of rosy, and you would not feel strong.

The same thing would happen if you had little fresh air to breathe.

PORES OF THE SKIN

Look at the skin on your wrist. What do you see? What is the name of these holes?

(Speak of the use of the pores and how they should be kept open, and why.)

EFFECT OF TOBACCO ON SKIN

We can often tell a cigarette smoker by the yellow stain on his fingers. Men who want to hire boys often ask them to hold up their hands.

If the tips of their fingers are stained by the use of tobacco, they tell them they are not wanted.

Every one likes to have a soft, clear skin.

THINGS TO REMEMBER

My body is covered with skin.

The skin needs to be kept clean.

It needs sunlight and air.

Tobacco harms the skin.

Cleanliness will do a great deal towards preventing disease. The germs that cause disease often cling to dust. For this reason walls, floors, curtains, and clothing should be kept as free from dust as possible.—ANDREW EADIE, M. D.

Suppose a boy has a lot of cigarettes and smokes a few of them every day. Such smoking will reduce his strength and general vitality, as will appear in his pale complexion and his diminished appetite.—T. M. Coan, M. D.

CLEANLINESS

NEEDED for the lesson on cleanliness is more imperative in some schools than in others. The children can be inspired to work reforms in the home where needed.

At Hull House, Chicago, the children near the Settlement come for free baths once a week.

At first, many came with no change of under-clothing with which to replace the soiled garments.

After a time, nearly all came with the desired articles.

The children saw that it was customary to make a change, appealed to the mother, and in most cases with success.

If we make cleanliness fashionable in a school it will have its devotees.

CLEANING OF THE EARTH

In March the earth is very dirty.

Something came and began to clean it. What was it?

What did the wind do to clean the ground?

We do not always like the strong March winds, but the earth needs them to do the cleaning we can not do.

Sometimes ice and snow are left in spots. What takes them away?

Then what comes and washes the earth? Is one washing enough?

Will the earth stay clean all summer? No, it needs to be washed often.

CLEANING OF THE HOUSE

A little later we have every part of our houses cleaned.

Will they stay clean the rest of the year?

No, we must do *some* cleaning every day.

CLEANING OF THE BODY

I think each of you can tell me what house each of you has to keep clean. You are the housekeepers.

How often should you clean your house?

BATHING

Do animals bathe?

Does the dog?

Does the cat? Why not? (Show that the cat's hair is so fine and thick that it would not dry quickly.)

Kitty never forgets to wash herself or her kittens. Her tongue is so rough that it cleans her fur thoroughly.

Please tell me how a bird bathes.

I wonder if you have ever seen a bird take a dust bath?

Some birds will sit in the dust and flutter their wings until the dirt sifts through their

feathers. (The rough dirt cleans off something that water will not take off.)

People sometimes keep animals in places that are not clean. Animals like to be clean and should always be well cared for.

(Speak of good rules for bathing and when baths should be taken.

Caution against going into the water directly after eating, or staying in too long.)

We should never go to bed with dirty feet.

CLEAN CLOTHES

A clean body says, "Give me clean clothes." With a little care we can keep our clothes clean. That helps mother.

CLEAN HAIR AND EARS

How shall we keep our hair clean?

You need to wash the outside of your ears often. Let mother attend to the inside.

CLEAN TEETH AND NAILS

How shall we keep our teeth clean?

How shall we keep our nails clean?

(In the poorest homes there is often only a pin at hand with which the child can clean his nails.

Wooden toothpicks are inexpensive. It would be well to give a small bunch to the child who is neglected at home. The corner of a card will answer.)

USE OF DOOR MAT

Have you a mat outside your door? What is it for? Is there one in our hallway? Every one who remembers to use it helps to make a pleasant schoolroom.

Every child who keeps the floor clean near his desk is a helper. What can you do to keep the schoolroom clean?

How can you freshen your clothing at night?

THINGS TO REMEMBER

Animals like to be clean.

If we wish to be healthy we must be clean.

We should keep every part of the body clean.

We can help keep our homes clean.

We can help keep the schoolroom clean.

The clean man, other things being equal, will be the healthy man and the moral man. To attain this condition he must secure pure air, pure water, cleanliness in and around the house, cleanliness of person, dress, and food, cleanliness in life and conversation.—SIR LYON PLAYFAIR, in *Journal of Hygiene*.

Touching the matter of person, the tobacco habit is unclean; touching the matter of health, it weakens many; touching the matter of morals, it belongs to the things of darkness.—B. L. WHITMAN, Ex-Pres. Colby University.

THE SKIN AND CLEANLINESS

THIRD YEAR

NOTHING is more attractive than personal cleanliness. No matter how plain the clothing, how irregular the features, if an air of cleanliness pervade a person he is at once attractive.

Some homes are so lacking in the things that make for cleanliness that it is almost hopeless to expect to receive children from them who are cleanly.

Do not despair ; if the children can not work a reform, you may enable them to " build better " when they have homes of their own.

Children observe the teacher's dress, and a silent lesson may often be taught by the teacher who is always dainty in personal appearance.

Blessings on the shirt waist which has done so much to promote cleanliness.

COVERING OF FRUIT AND ANIMALS

We will talk today about the covering of things. Everything has a skin or something that takes the place of a skin. We will talk of the use it is.

What does the skin of apples and other fruits do for them?

(Show that the pulp would be soiled and dry if it were not for the skin.)

(Show a walnut or any nut with outside shell on it.)

This nut and some other kinds have two shells, one holds the meat, the other stays on until the nut is ripe, then falls off.

The outer shell keeps squirrels from eating the nuts before these are ripe. They do not like the taste of the outer shell.

Has a tree a skin? What is its name?

Each creature has the kind of skin that suits it best.

Why do sheep have wool growing from their skin?

(Bring out the additional fact that sheep often wander through the bushes, whose thorns would tear their skin.)

Sheep dogs have shaggy, coarse hair. Why?

What kind of a skin does a snake have?

Why does he need a scaly skin?

What kind of a skin does a fish have? Why?

Have you a scaly skin? It does not look scaly but it is. The scales are so small that you can not see them. They overlap each other like the shingles on the roof of a house.

If you look inside your stockings at night, or shake your underclothing, you will see the small particles fly.

CHAPPED HANDS

Sometimes in winter the cold weather dries

the skin, and the scales peel too fast. We say the hands are chapped.

Vaseline, or glycerine and rose water, used when going to bed or after washing the hands will help them.

We should be careful to wipe the hands dry in cold weather.

OUTER AND INNER SKIN

We have two skins. The one we see is a covering for the real skin. It has no feeling. How does this help us?

The skin below the outer skin is full of blood-vessels, and is easily hurt. What do the blood-vessels do for the skin?

Can you see the small holes in your skin? What do you call them?

Little tubes go from the pores into the body. What do they bring to the surface of the skin?

WHAT THE PERSPIRATION DOES

When you have been playing hard or exercising, these tubes bring a great deal of perspiration. The perspiration carries from your body what is no longer of use to it, just as ashes fall from the grate.

Even in winter, perspiration passes off, but sometimes it dries so quickly that you do not notice it.

Should the pores be kept open or shut?

What do you think will close them?

EFFECT OF DUST AND DIRT UPON THE PORES

Dust from the room and street fills the pores no matter how careful we are. Frequent bathing will keep the pores open. (Give simple directions for bathing.) Speak of the need of having the feet clean on going to bed.

When you have been exercising and are perspiring, should you stand or sit where the cold air will blow upon you? Why not? Should you wear rubbers in the house? Why not?

TOBACCO

What did you learn last year about the effect of tobacco on the skin?

THINGS TO REMEMBER

People and animals are covered with skin.

There is an outer and an inner skin.

The outer skin has no feeling.

It protects the inner skin.

The skin has a great many pores.

They should be kept open.

We should bathe often.

(When the hands are badly chapped and have become grimy, the teacher may suggest washing them in warm water, Indian meal, and a little soap. When clean, rub cold cream well into the skin.)

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Death is strong, but life is stronger;
Stronger than the dark, the light;
Stronger than the wrong, the right;
Faith and Hope triumphant say
Christ will rise on Easter Day.

—PHILLIPS BROOKS.

WHO IS RESPONSIBLE

WHOEVER is familiar with the history of this nation can not fail to see that in the plan of God this country is dedicated to human liberty. The men and women who came over in the Mayflower in search of religious liberty, were loyal to all that that priceless boon cost.

Their descendants one hundred and fifty years later represented the spirit of their sires in the seven years' struggle that gave this nation political liberty, and their grandchildren did not falter in the four year's conflict that gave individual liberty to America and broke the chains of human chattel slavery.

It has always been the pride of the American that the people in every case have been loyal to the duty devolving upon them for the maintenance and extension of the various phases of liberty which this nation has achieved. Thus the stars and stripes today represent religious, political, and civil liberty.

Shall the people of this nation which has achieved so much ultimately perish, victims of alcohol slavery?

The legislature of every state and the National Congress have provided that the people shall not perish in this way, by enacting laws which require in all public schools the study of the physiological reasons for obeying the laws of health, including those that teach total abstinence from alcoholic drinks and other narcotics.

The enforcement of these laws is in the hands of local school commissioners, superintendents, school boards, and teachers. History is holding a suspended pen above its unwritten pages on this question. Can the men and women intrusted with the holy duty of enforcing these temper-

ance education laws say to the men of Valley Forge, Antietam, and the Wilderness, "You did well your part in your day to maintain the phase of liberty then endangered. The hosts on hosts of abstainers from the enslaving cup of alcohol who are now outlawing the saloons are proof that we are striving to do our part in making this nation a strong, achieving people, free from the alcohol slavery that has been the bane of so many nations.

This is a question that will have to be met in the grand review of results of individual action.

There are four essentials to the enforcement of our temperance education laws:

1. A course of study in this branch providing for not less than two or three lessons per week for ten weeks of each of the three primary years, and three or four lessons per week for ten weeks of each school year above the primary, ending with the ninth year or with the first year of the high school; the lessons to be taught according to the best modern methods, as in other branches.

2. Indorsed text books adapted to grade in the hands of all pupils using text-books in such other studies as geography or arithmetic with oral lessons for pupils unable to read and an oral lesson book for primary teachers.

3. Examinations or tests for promotion in this as in other studies.

4. The interested teacher.

In a large majority of cases where we have the first three essentials, we have also the last; for the teachers of this country as a whole are ready to do their part if they are given material to do with and time in which to do it.

When you, members of the school boards, superintendents, and other school officials, sit in deliberation over the question as to whether you will, by providing these four essentials, secure that teaching which is making us one of the most sober and achieving of nations, stop and consider, if you are tempted to neglect these means of educational grace, what answer you will give to the heroes who in the past have been loyal to the utmost duty demanded of them for the defense of the phase of freedom for which they suffered and fought.

There were camp-followers on the Mayflower, Tories, and a Benedict Arnold in Revolutionary days, and Copperheads in the Civil War; nevertheless, God's great purpose of liberty for this nation was carried out.

But no halo gathers about the names of those obstructionists who lost the opportunity of a life time of working together with God for the accomplishment of His great plans.

(Continued on third page of cover.)



Grammar Lessons

SEVENTH OR
EIGHTH YEAR

CIGARETTES AND TOBACCO

IN July, 1902, almost without warning, the famous old Campanile of St. Marks, Venice, suddenly collapsed. This costly and beautiful bell tower, begun in the tenth century and finished in 1517, had for almost four hundred years defied the wreck of time.

What had now brought the brave structure so low? Skilled engineers and architects consulted together and sought to answer the question. The weakness was not in the superstructure, but searching through the ruins they found that its base had been undermined, and but for this weakness it might have stood for many years to come.

Through the centuries the Campanile had charmed men with its beauty and its chiming bells had reminded them of their religious obligations, but both its beauty and its usefulness were brought to an untimely end by the treacherous undermining of its foundations.

The story of the fall of the Campanile is also the story of many a ruined life.

Nearly or quite a third of a lifetime is consumed in laying the foundations of the physical, mental, and moral natures of a human being, and the beauty and usefulness of the whole after-life depend upon whether these foundations are firm and strong, or whether they are being undermined by folly or vice.

Today there are more than 10,000,000 boys of school age in our land, to a large part of whom will come temptations to the use of tobacco, the most common and dangerous form of which is cigarettes.

Nothing is more surely sapping the foundations of their future usefulness and thus undermining the vigorous manhood of our race, than this vice of cigarette smoking among young boys. One has but to read the papers to learn of the mental inefficiency, the physical degeneracy often ending in insanity, and the actual criminality of mere youths who are what we commonly call "cigarette fiends."

Our hope of better things lies in the schools. Every teacher has it in her power so to teach the dangers in the use of tobacco and cigarettes that boys will clearly understand how both weaken the foundations of their physical, mental, and moral natures and thus undermine their chances for success in any line of business, scholarship, or art.

As preparation for this lesson the teacher may provide herself with one or more good pictures of the Campanile of Venice and ask some member of the class to bring in a brief sketch of this famous bell tower which may be read or recited. The facts of its having required almost 600 years in building, and that its destruction was brought about by weakness in the foundations should be especially commented on.

How many years does it take a child to get his growth? Which years are these? If his body is not well grown when he is 21 or 22 years old, can anything be done to repair the mischief? Why, then, is it so important to form right physical habits in youth?

Ask the class to mention some of the things which are necessary to healthy growth. These will include good food, pure air, proper clothing, plentiful of restful sleep, and abstinence from harmful drugs, the most common of which is tobacco.

HISTORY OF TOBACCO

Briefly review the history of tobacco, and point out that the tobacco habit is one that was borrowed from a barbarous race, the Indians; that when introduced into Europe its use was forbidden by the King of England and by the church. Have some one look up the poisonous properties of tobacco and tell what dangerous gases are liberated in the smoke.

Show that while some other drugs are used as medicine by physicians with good results, tobacco is never so used, and that no antidote is known for tobacco poisoning. Recall cases where people have been poisoned to death by swallowing tobacco.

What are the effects of its first use? Point out that the dizziness, terrible nausea, low pulse and collapse that usually follow a first attempt to use tobacco are symptoms of severe poisoning, and that the system thus makes agonized efforts to warn and save the user.

Find out from books why it is that when a person becomes accustomed to tobacco it does not always appear to harm him.

Discuss the special evil effects from each of the usual forms of tobacco using; the pipe, cigarette, cigar, chewing, etc., paying especial attention to the fact that the cigarette smoker nearly always inhales the smoke, thus injuring

the delicate membranes of the lungs and also poisoning the blood with carbon-monoxide gas.

Write the following, or a similar list of topics, upon the board or upon slips of paper, and assign one or more to each pupil who is to learn what he can from books and all available sources and recite it in class.

TOBACCO UNDERMINES THE PHYSICAL SYSTEM

Effects on Lungs
Effects on Heart and Blood
Effects on Digestion
Effects on Brain and Nerves
Effects on Special Senses
Tobacco retards growth
Cigarettes cause insan-

ity
How the use of tobacco leads to drinking
Tobacco predisposes to disease

Hereditary effects on the children of tobacco-users.

The teacher should be thoroughly familiar with each topic, and prepared to drive home the lesson that tobacco, and particularly cigarettes will certainly undermine the foundations of the boy's health and strength and poison his system throughout. The authoritative quotations may be written on the board and discussed, and some of them may be committed to memory.

TOBACCO UNDERMINES THE MENTAL POWERS

Having carefully considered the way in which tobacco and especially cigarettes undermine the physical system, take the subject of its undermining effects on the mental powers.

Review briefly the effects of cigarettes upon the brain, nerves, and special senses, and make it clear that as tobacco contains a narcotic poison, nicotine, it has, in time, a stupefying effect on the nerves and brain. The more delicate the nerves the greater is the injury.

Show how mental ability depends upon quickness of perception, the memory, judgment and power to concentrate the mind upon the task at hand, and then make it clear that tobacco impairs each of these to a greater or less degree, according to the individual and amount of indulgence.

The teacher must be prepared to answer the objection likely to be made at this point, that many professional men use tobacco, and not a few great men smoke cigars.

This objection ought to be fairly met and thoroughly discussed.

Point out first that most eminent men who are smokers did not use the weed until they were grown, and that probably not one of them would advise a boy to use tobacco in any form.

Point out also that great men as well as the humbler devotees of tobacco have often paid the extreme penalty of their vice. Gen. Grant, the hero of many battles, was slain when but little past his prime by cancer of the throat

which, in this case as well as in that of Emperor Frederick of Germany, was caused by tobacco poisoning, and the novelist Stevenson, as Dr. Chas. H. Shepard tells us, smoked himself to death:

Make it clear that the great men who were tobacco users were great in spite of the vice and not because of it; great in many respects but not great enough to escape bondage to a filthy habit.

Show that "it would be as reasonable to call epilepsy 'harmless' because Caesar and Napoleon and Charlemagne were epileptics; to say that scrofula helps the literary judgment because Johnson and Pope were scrofulous; or that nervous debility makes

philosophers because Kant and Herbert Spencer were neurasthenics, as that tobacco is harmless because some otherwise great men have been its slaves."

"Because a ten-talent man is great enough to override a vice, it proves neither that the habit is a good thing nor that a one-talent man forming it would not be more than ever incapacitated."

Refer to the many investigations in schools and colleges all of which tell the same story of intellects dulled and even ruined by cigarettes. For instance:

P. L. Lord, in an article in the teachers' *Institute*, speaks of a certain school of 500 pupils, graded up to the ninth, where it was found that



"Music, that audient outlet for the soul,
Comes in and grief goes out, and Life is whole."

the boys were very inferior to the girls. Looking for the cause the teachers found that a large majority of the boys were smoking cigarettes.

Careful investigations covering several months, in which 20 "cigarette fiends" were compared with 20 non-smokers, showed that while 95 per cent of the abstainers were reasonably sure of getting a good education, only 5 to 10 per cent of the smokers stood any show in school; they were two and one-fifth years behind their grade, and three years behind the girls who started with them. Out of the 20, 10 are confirmed truants, 18 have low rank in studies, only 2 are fair and none are excellent. All but 1 had been demoted, and they had failed of promotion from 1 to 10 times each.

Some of our colleges have forbidden students to use tobacco, and it is said that for 50 years no man at Harvard who was a tobacco user stood at the head of his class.

Ask the class to inquire how many graduates from the high school can be found who were tobacco users when they entered the grammar school. Some educators say the thing has not been, and can not be done.

TOBACCO UNDERMINES THE MORAL NATURE

Hon. George Torrance, Superintendent of the Illinois State Reformatory says that his long experience leads him to the conclusion that nine-tenths of the crimes committed by boys under 15 are due to cigarette smoking. Of 278 boys between the ages of 10 and 15 sent to the state reformatory, 92 per cent were cigarette smokers, of whom 85 per cent were already "cigarette fiends" at the time they committed the crimes for which they were committed. He says:

"If there were nothing more harmful than the associations generally formed by the young boy beginning with his first cigarette, that alone would often prove his downfall. He realizes that he must take his first smoke in secret, and in order to do this he generally finds companions who are victims of the habit and who have already taken their first downward step.

"But this is not the most harmful effect. I assert, unhesitatingly, that the use of cigarettes affects the nervous system, weakening the will power, and destroys the ability of the boy to resist temptation, and because of this he easily falls a victim to those habits which not only destroy the body, mind, and soul, but irresistibly lead him into a violation of the laws of the state."

Read and discuss the above statements with the class, and by questioning bring out the facts that a boy, in order to begin to smoke cigarettes, must deceive his parents, for they will not allow it if they know it; that the boys who have

already formed the habit, and to whom he goes to learn, are often vulgar, deceitful, liars, and even drinkers and petty thieves, and teach him the same vices; that the habit weakens his self control so he is not able to resist temptation, and thus he is led on till he often becomes a willing tool of older criminals, and is sent to the reformatory if not to prison. Show how the last is the logical conclusion of the first, but do it inductively.

Clippings from papers and personal observation will furnish other material showing that the use of tobacco corrupts the moral nature to a greater or less degree.

TOBACCO UNDERMINES BUSINESS PROSPECTS

Dr. Winfield S. Hall, in a personal letter to young men gives a life sketch of two young business men which, representative heads of business houses say, presents typical cases of the young man who uses tobacco and the one who does not.

He says that every young man desires success and in these days of strong competition it means: *honesty, industry, temperance, and economy.*

Two young men of equal age, experience, education, and ability, both of whom are honest, industrious, total abstainers, and economical, enter the employ of a large city firm. They start at \$10 per week. Each pays \$6.50 weekly for necessary living expenses and \$82 yearly for wardrobe.

Mr. Jones, feeling that he can afford some of the "pleasures of life," buys five 5 cent cigars daily, smokes three, and gives away the others to patrons of the firm or companions. He spends his early evening hours smoking with friends.

Mr. Brown spends no money for cigars. After dinner he takes a brisk walk for an hour with some congenial friend, and returning to his room with mind clear, alert, ambitious, studies books and general literature which will make him better fitted for questions which may arise in the firm.

By the end of the year Mr. Brown has \$100 saved which he puts at interest. Each has done well in business.

Both enter the second year with a salary of \$12 and their scale of living expenses remains about as before, except that Mr. Jones feels that he is able to smoke a better brand of cigar and buys them by the hundred for "economy's sake." He spends his evenings wondering if his firm appreciate his services.

Mr. Brown continues to spend at least two hours each evening in studying statistics, market reports, and various matters pertaining to his business.

The beginning of the third year finds them each drawing a salary of \$20, and that year for both is much like the preceding. Mr. Jones seems to be more prosperous but has saved nothing yet, for his surplus money has gone up in cigar smoke and his time has been frittered away in the process; he is living up to his last dollar and thinks himself very economical to live on so small a salary; while Mr. Brown has \$500 on interest and is now well informed on tariff, commerce, etc.

As the third year draws to a close, both are sent to neighboring states to consummate difficult deals of considerable importance. On such an errand 25 cent cigars and 15 cent wit stand a poor show in a contest with a thorough and ready knowledge of every detail of the great deal. Mr. Brown surprises himself and his firm by the skill with which he consummates his deal, and enters his fourth year as manager of a department at \$2,000 and a percentage of the profits of the business, while Mr. Jones continues a t \$20 per week.

Every large city sees this little drama repeated over and over again, perhaps requiring a longer time but always with the same results.

Dr. Hall, in closing, says: "Tobacco does more to undermine the success of young men than does any other one factor."

Read or tell this story to your class and invite a discussion. Why is Dr. Hall's quotation true?

Point out that tobacco is the entering wedge of two lines of dissipation. One is dissipation of cash for things unnecessary, the other sense gratification. Show that it is the soothing action on the nervous system that gratifies the senses, and just here lies danger to the young man's business success, for it steals away his vigilance and alertness and handicaps him in the sharp competition of business life.

Make it plain to your class that these are the very least ill results that may follow the moderate use of tobacco. Then, looking further, show that the use of tobacco often paves the way to

other dissipation by requiring compensating stimulant. Bring out the fact that used in the greatest moderation, and without considering the effect on the health, tobacco effectually undermined this young business man's career.

Then show what would have been the probable results had he used cigarettes freely. Bring out the fact that had he been a cigarette user before beginning work here he would scarcely have got the place, and by discussion and questions show how many great business concerns refuse to employ in any capacity a boy who uses cigarettes.

AUTHORITATIVE QUOTATIONS

CIGARETTE SMOKERS BARRED OUT BECAUSE UNTRUSTWORTHY

Director Harriman of the Union Pacific Road said their company might just as well go to the county lunatic asylum for its employes as to retain a cigarette smoker in its employ.

Under no circumstances will I hire a man that smokes cigarettes. He is as dangerous on the front end of a motor as the man who drinks; in fact he is more dan-

gerous. His nerves are bound to give way at the critical moment.—SUPT. LINDELL St. R. R., St. Louis, Mo.

This obtunder of moral discrimination [tobacco], to repeat again familiar facts, weakens the memory, vitiates the appetite, produces vertigo, enfeebles the action of the heart, depresses vitality, leads to intemperance, arrests development, causes insanity, loss of sight, deafness, laryngitis, and cancer of the lip.—MATTHEW WOODS, M. D., Member Am. Med. Ass'n.

In these days of active competition it is the best brain that wins, and the man who knocks out his brains with tobacco is knocked out of the contest for supremacy in any field of activity. When a young man applies for a job, he is practically renting his brains, and no employer cares to hire a damaged set when he can get



"Love unbars the doubter's prison,
Faith assures us Christ is risen."

a clean set just as well.—WILLIAM ALLEN WHITE.

The [cigarette] smoke when inhaled is brought in contact with over 500 cubic feet of surface in the lungs, with immense facilities for absorption, and at once the nicotine is deposited in a fruitful field and incorporated in the blood."—HEBER BISHOP, M. D., Boston.

CHILDREN INHERIT EFFECTS OF TOBACCO

A clergyman denied the ill effects of tobacco using, asserting that his father had always smoked and at 93 was still vigorous. But the clergyman at 61 was a nervous wreck, and his son, the grandson of the vigorous old smoker, was obliged to leave college at 19 because of nervous exhaustion.—E. A. KING in *The Cigarette and Youth*.

I am informed that boys as young as 7 years begin to smoke [cigarettes]. If we neglect them at that age they will be ruined for life. If a boy begins before he is ten years old he will never be able to graduate from a high school. This is due to the fact that smoking at that age makes his brain dull, and being inactive he is unable to study the required branches properly in the advanced schools.—C. E. STEVENS, Supt. of Schools, Stoneham, Mass.

TOBACCO IMPAIRS THE NERVOUS SYSTEM AND THE INTELLECT

The use of tobacco in any form previous to 16 years of age has an undoubted tendency to lower very materially the mental force and acumen, and to render the user a person without ambition, and may even cause insanity or idiocy.—N. B. DELAMATER, M.D., Specialist in Mental and Nervous Diseases.

Boys who have used tobacco freely are thin, anaemic, and neurotic, and are often undersized.—GEO. H. CATERMOLE, M. D., Prof. of Pediatrics, University of Colorado, Denver.

It is positively harmful and detrimental to the development of the physical and mental powers of our growing youth. Statistics show most markedly the contrast in physical and mental standard between the boy who uses tobacco and the one who does not.—L. D. MASON, M. D., Brooklyn, N. Y.

TOBACCO INJURES THE HEART

Nicotine alters the structure of the heart by causing a change of its muscle fibers into fat, leading to weakness, fainting, and sudden death.—E. CHENEY, M. D., Boston.

Habitual smokers often suffer from palpitation of the heart, and from intermittent pulse.—Prof. H. N. MARTIN, A. M., M. D., Late Prof. of Physiology, John Hopkins University, Baltimore, Md.

TOBACCO DOES NOT PREVENT DISEASE

The idea that tobacco prevents disease is an error. A tobacco user's chances of recovery from malignant disease are lessened 50 per cent.—O. M. STONE, M. D., Boston.

I have seen bright boys turned into dunces, and straightforward, honest boys, made into miserable cowards by cigarette smoking. That I am speaking the truth, nearly every physician and nearly every teacher knows.—A. CLINTON, M. D.

TOBACCO INTERFERES WITH GROWTH

Children who use tobacco before reaching maturity have their growth interrupted, as nothing more definitely interferes with the equilibrium of tissue-building, digestion, assimilation, elimination, metabolism, than tobacco.—I. N. LOVE, M. D., Prof. of Diseases of Children, Clinical Medicine and Hygiene, Marion-Sims College of Medicine, St. Louis, Mo.

Tobacco creates thirst and vital depression and to remove these the use of liquors is often resorted to.—JAMES COPELAND, M. D., F. R. S.

EFFECT OF TOBACCO ON THE SPECIAL SENSES

The Superintendent of West Point says that many of the students having developed eye trouble soon after entering the academy, an expert oculist examined the eyes of the students and declared that the weakness of vision was caused by tobacco poisoning from the use of cigarettes before entering West Point.—WINDFIELD S. HALL, Ph. D., M. D.

The effect of tobacco, especially if smoked and exhaled through the nose, or snuffed, is to paralyze the sense of smell.—W. H. RILEY, M. D., Supt Colorado Sanitarium, Boulder, Colo.

CARBON MONOXIDE GAS FROM CIGARETTES POISONS THE BLOOD

Two or three mouthfuls of tobacco smoke from a cigarette were shaken up with a few drops of blood diluted with water in a bottle. Almost immediately the blood assumed the pink color characteristic of blood containing carbon monoxide gas. . . . In this experiment we have some explanation of the evil effects of cigarette smoking, for it is chiefly cigarette smoke that is inhaled, an indulgence by which the poisonous carbon monoxide is introduced directly into the blood.—*London Lancet*.

PHYSIOLOGY TOPICS FOR APRIL

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(Continued from Page 123)

Last week young men who ten years ago were in your schools were arrested for drunkenness. Some of you called temperance physiology a fad, not worth the time needed for you to outline a scheme for the pursuit of this study in the grades that would have taught them the great danger of beginning to drink. Can you

escape responsibility for the lack of knowledge on their part which led to their downfall? The state says you shall impart this information to the pupils in all schools and pays you for doing it.

Who is responsible for the ruin of these young men?

Benedict Arnold could betray his country, but he could not prevent the political liberty which God had in store for this nation. No more can the brewers, owners of brewing stock, the Committee of Fifty, nor any of their sub-committees and sympathizers prevent the dethronement of alcohol. With trumpet, pen, and myriad voices science declares alcohol to be an enemy to human well-being, and nothing can prevent the fulfilment of God's purpose that this saving truth shall reach the people.

This nation will be saved from the thralldom of alcohol, but thousands will be lost because of the indifference of some school officials to their duty in providing for this education for the pupils in all schools, as the laws require.

School officials and teachers who are neglecting this study, ask yourselves who will be responsible for the loss of these who might have been saved had you done your utmost duty.

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THE SCHOOL PHYSIOLOGY JOURNAL



PHYSIOLOGY CHARTS No. 1

THE CHILDREN OF TODAY WE SHALL HAVE SAVED THE NATIONS TOMORROW

IF WE SAVE

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No. 9

THE BROOK

BY ANNA BURNHAM BRYANT

THE trees are white as Christmas,
And gay the carpet green,
With dewy webs of lace at morn
Where fairy folks have been ;
But oh, the rill's sweet laughter
As it goes leaping by !
It is a little runaway,
As free and glad as I.

The violet in purple,
The cowslip all in gold,
With all their friends have come in troops
May festival to hold.
But oh, my little brooklet !
When you come dancing by,
I laugh, for here's a runaway
As free and glad as I.

The soft white clouds go sailing
Through seas of summer joy ;
The whole world keeps a holiday
For every girl and boy.
But best I love your laughter,
Dear brook as you go by ;
You're just a happy runaway,
As free and glad as I !

SCIENTIFIC TEMPERANCE INSTRUCTION AND THE COMMITTEE OF FIFTY IN GERMAN EYES

BY ERNEST GORDON

THE Berlin medical publishers, Urban & Schwarzenburg, have just issued (with the support of the Royal Academy of Sciences) a complete bibliography of recent scientific studies (books, monographs, reports, etc.), of the alcohol question. It was prepared by the Swiss Dr. Abdenhalden with the aid of sixty co-workers, and contains only titles and brief explanatory notes. It fills fifty odd pages,—a fact which indicates the immense extent to which continental investigation has of late years occupied itself with this matter. The writer can not claim to have even nibbled about the edges of this vast literature, but from what he has read he is satisfied that its trend is not only in the direction of absolute abstinence, but towards the most drastic remedies any American prohibitionist would suggest.

Over against this huge and weighty product of German patience and honest German scholarship we have, as our American contribution to the study of this subject, the reports of the Committee of Fifty—gentlemen, as Professor Peabody explains, of “the most diverse religious faiths.” The contrast is simply astonishing. The group, so the publishers announce, contains “some of the ablest thinkers of America.” Yet they and their associates are apparently as unconscious of the remarkable anti-alcohol movement among European scientists, as any assemblage of Hunan mandarins, in horn spectacles and with long grown, carefully tended finger nails.

I was talking some weeks ago with an eminent physician of Dresden who is one of the newer and more radical recruits to the prohibition cause. He has recently started a quarterly for the study of alcohol and its action, with the collaboration of such well known men as Professor Fränkel of Halle, Professor Gruber of Munich, Professor Harold Westergaard of Copenhagen, Dr. Guttstadt of Berlin, Professor Binswanger of Jena, and twenty or more others. I asked him, on looking down the list, how many could be fairly called prohibitionists. He drew his pencil under certainly half of the names, in reply. This gives again some conception of the extent to which radical ideas have begun to penetrate the world of German medicine.

Then he picked up the small volume which summarizes the work of our fifty American investigators, and turning to the Billings report he said, “I hate the Committee of Fifty.” He went on to characterize in stinging words its pretentiousness, its assumption of preternatural fairness, its mean references to the temperance ladies, and its ignorance of the results of contemporary research.

He dwelt on the significant fact that the Committee should have selected a chemist, and not even a physiological chemist, to consider an intricate physiological problem.

He referred to the conclusions arrived at, of which we have heard so much in our thoughtful American press. “Alcohol a food indeed because it is a fat-saver ! The discoverer of this ‘fact’ does not seem in the least to realize that the fat saving is pathological and not physiological.” As you travel from the beloved Fatherland down to Constantinople, you remark that the vast bellies of Germany and Austria disappear on entering Moslem territory and the human form takes on its human lines and shape.”

Then he animadverted upon the other "proof" of Professor Atwater, based on the oxidation of alcohol in the body. He handed me an address on this phase of the subject by Dr. Hinhede, physician in the Wanderborg Hospital (Denmark) which has recently been sent to every doctor in Germany.

Dr. Hinhede described the action of chloroform, ether, and other "foods" (in the Atwater sense) which also are oxidized in the body. He dwells on the relation of alcohol to this group, and comes to the conclusion that the excitation which the champagne drinker feels at a banquet is directly comparable to the heightened gaiety of the alcoholized patient whom the doctor finds it so difficult to chloroform before an operation. In other words, he classifies our American "food stuff" with the narcotic poisons.

But on no point did the Dresden doctor speak more strongly than on the attack which the Committee of Fifty have made on the American system of scientific temperance instruction. He pointed to Dr. Billings' slur on the American text-books as "pseudo-science" and said: "But does your American doctor know that these books are based on the studies of Professor Fick of Wurzburg, of Weichselbaum our great University of Vienna anatomist, of Von Bunge the physiological chemist, and of others equally eminent? If he characterizes their conclusions as 'pseudo-science' what language does he suppose they would use to describe his ridiculous statement that 'salt, ginger, tea, pepper, etc., can be called poisons with equal propriety' as alcohol?"

Then he went on to express his admiration for the great organization of American temperance women and for all it had accomplished toward the enlightenment of public opinion in the enormously important alcohol matter. He wished only that the women of Germany could be brought up to the same level of intelligent activity against the race poisoning which the brewers are carrying on. Then, turning to a group of ladies and gentlemen standing near, he introduced me as one who was acquainted with Mrs. Hunt and her work for temperance. It was gratifying to hear the interest expressed in that remarkable woman, to whose credit must be set down the weightiest piece of constructive statesmanship which our country has brought into being in the last two decades.

One of the Committee of Fifty declared some time ago that the temperance women "were doing the work of the devil." That is not the opinion of many equally qualified to judge. Thus Dr. Max Gruber, who occupies the chair of hygiene in the University of Munich, wrote recently: According to my judgment, science must esteem and praise as its most val-

uable allies, those who out of love to their kind take upon themselves the heavy task of day by day fighting the fight against drink."

The investigations on the continent have borne their practical fruit in the remarkable movement of the English physicians in behalf of temperance instruction in the schools. That more than 15,000 physicians headed by such eminent men as Sir Lauder Brunton, Sir Victor Horsley, Sir William Broadbent, Dr. Sims Woodhead should petition the government to introduce the American system into English schools is a fact which should make Professor Sedgwick of the Technology Institute pause in his efforts to rescue the schools "from being the battleground in the contest between saloon-keepers and the Woman's Christian Temperance Union."

Lord Londonderry, a true representative of the English *beverage*, turned down the petitioners as a matter of course. But the new liberal government, whose almost first bill in Parliament was one providing for the feeding of hungry school children, will without doubt accept the proposal of the physicians, and in this way give a serious blow to that institution which drives so many little children to school with empty stomachs.

England lies nearer the continent and has therefore first felt the impulse of the Franco-German anti-alcohol movement. But it will not be long before our "able thinkers" too will awaken to the fact that they have, in Lord Salisbury's pregnant phrase, "put their money on the wrong horse." If the whole alcohol matter were not so frightfully serious, one might extract a good deal of amusement from the anticipation of that change of front, which "ces ames moutonnieres," as M. Antole France would call them, are bound to make in the near future.

What bewilderment, what a scurrying about when the Hydes and the Eliots, and the rest of the Fifty learn for example that Dr. Triboulet, in his report on alcoholism to "*La Societe des Hopiteaux*," declares that "we are facing the danger of race extinction from tuberculosis, alcohol preparing the way;"—or the fact that the committee appointed by the French Academy of Medicine to report on alcoholism, recommended, *inter al*, that the academy should take a solemn vow to work for the immediate reduction of the number of those same drink shops, which the Report of the Committee of Fifty, according to Mr. Calkins' statement, declares to be "relatively innocuous, purveyors of food, literature and kindly help!"

How different will be the attitude towards the school law of these obstructionists, so ungallant in their references to women's temperance effort, and so mischievous in the perverse use of their prestige which their greater or less success

in various walks of life has given them among the American people, when they realize the position which educationalists, like Professor Hartmann of the University of Leipsig, take.

"Saturate your whole teaching force with anti-alcohol instruction," says he. "Place anti-alcohol books in teachers' libraries, and in those of all universities and polytechnics. See that the subject is discussed by the pedagogic press, at meetings of school directors, and before teachers' gatherings. Secure lecturers of the highest expert knowledge—jurists, physicists, physiologists, to address the combined schools of each city. Introduce the subject wherever possible into the religious classes, the natural science classes, etc. Send circulars home to parents, showing them the danger of alcohol-poisoning to children; and even invite parents together to explain to them the danger of drinking. Urge the teachers to organize for the fight; develop anti-alcohol unions among the school children."

Another German education-alist, Rector Enking of Kiel, goes even further. We would introduce temperance matter into the reading books, would have drink statistics used in the calculations of arithmetic classes,

and would, of course, make the subject an integral and leading feature of the physiological teaching.

One thing is certain. If the brewers of Milwaukee and those among "America's ablest thinkers" who consciously or unconsciously are helping them in their reactionary efforts, hope to destroy or cripple seriously the system of anti-alcohol teaching in our schools, they must be soon about it. The adverse judgment upon alcohol by the scientific world grows daily more decided and indeed more bitter. The opinions of the American Committee of Fifty are, one can confidently say, already as antiquated as any of the Venetian Council of Seventy. If the temperance instruction laws remain untouched five years longer, they will never afterward be tampered with.

BOOK NOTICES

THE BITTER CRY OF THE CHILDREN, by John Spargo. Price \$1.50. Macmillan Company, New York.

In his attempt to state and to visualize the problem of poverty as it affects childhood, and to show "the measure in which poverty is responsible for the excessive infantile disease and mortality; the tragedy and folly of attempting to educate the hungry, ill-fed school child; and the terrible burdens borne by the working child in our modern industrial system," the author has succeeded admirably. To his own personal experience and observation he has added the result of an extended study of authorities and successful experiments in dealing with these conditions not only in America but in Europe and Australia.

He shows that the children of the nation are capable of expressing all the good or evil possible to the world, that it is essentially a matter of opportunity and environment whether the children of today become physical, mental, and moral cretins, and makes an eloquent plea for the 2,000,000 children between the ages of 5 and



"With the children let us go
Where the star-eyed daisies grow,
In a joyful company."

14 who are victims of chronic under-feeding, and the hundreds of thousands of tender years who are working under conditions as dreadful as ever slaves endured.

THE GREGORY GUARDS, by Emma Lee Benedict. Lothrop, Lee & Shepard Co., Boston.

An interesting tale of the adventures of six very human boys the leader and most attractive of whom is Matt Campbell, a city newsboy who in defending his own rights and those of weaker children had whipped every boy of his own size in the locality of his home, and whose push and enterprise were quite as successful in helping him to overcome himself and win friends and business success.

It teaches manliness, and faithfulness to high ideals, without cant.



Primary Lessons

FIRST YEAR

CLOTHING

AT first, it may seem as if the questions of how children should be dressed, and of what material their clothes should be made, were really subjects for the home instead of for the school. But second thought will show that the teacher's influence is considerable.

She can use this influence on the side of suitable clothing, emphasizing not the ornamental value of clothes, and so arousing vanity, but the protection which proper clothes afford.

MATERIAL FOR THE LESSON

For this lesson let the teacher have pictures of sheep and fur-bearing animals. It is often possible to have a piece of sheepskin.

To illustrate cotton and linen, have, if possible, pictures of the cotton and flax growing and specimens of the raw material. Children will also be interested to see the cocoon of a silk worm and some of the raw silk.

ANIMALS' CLOTHING

Do animals have clothes?

What are clothes for? For protection against the weather.

What animal can you think of which has a good warm coat for winter? A dog.

In summer what happens to it? We say he is shedding his coat. Sometimes we shear off the dog's coat to keep him cool.

Do you know of any animal which has a very thick white coat? The sheep.

What does the shepherd do with the sheep's coat in the spring?

What kind of coats do the birds have?

Besides keeping the bird warm, the feathers keep him dry. How?

In cold countries, the animals all have heavy coats of fur. What kinds of fur have you seen?

PEOPLE'S CLOTHES

Why do people wear clothes?

Here is a picture of the Esquimo children.

What are they wearing? What kind of a country do you suppose they live in? Why?

Here is a picture of some little Filipino children. What do they wear? What kind of a land must they live in? Why?

Do we wear the same kind of clothes all the year round? What kind do we wear in summer? What kind in winter?

Do we wear the same kind on a rainy day that we do when the sun shines? What do you wear in the rain?

Do you wear the same clothes for best as for every day?

We must be very careful of our best clothes, not to soil or tear them.

SENTENCES

We wear warm clothes in winter.

Thin clothes are best for summer.

Clothes are made of cotton and wool.

In winter we wear fur.

WINTER CLOTHING

What kind of clothes do we wear in winter? What are thick clothes usually made of?

Name the different things you wear made of wool. Little children ought to wear warm shirts, drawers, and stockings in cold weather.

Sometimes outside garments are made of fur. Name everything you have seen people wear that is made of fur.

Where do we get the wool to make our garments? Where do we get fur?

SUMMER CLOTHING

What are our summer clothes made of?

Why is cotton, linen, or silk better in summer than wool or fur?

Where does cotton come from?

After it is picked where is it made into cloth?

Where do we get linen? silk?

FIT OF CLOTHING

Our clothes should fit us. If you put on a waist that you wore last year, how does it feel? Why should we not wear tight clothing?

What else besides dresses and trousers should always fit? Shoes. Why should we not wear shoes that are too small?

They make our feet sore and give us corns.

Girls' skirts and boys' trousers should always button to their waists.

CARE OF CLOTHING

When we take off our clothes what should we always do with them? Shake them. Why?

Why should we not leave them in a heap on the floor or a chair?

What should we do with our shoes?

We must always take good care of our clothes, keep them clean, and hang them up.

SHELTER

SECOND YEAR

CHILDREN look upon the home as existing as a matter of course. It does not occur to them, unless suggested, that there are reasons for its establishment and maintenance. By showing what these reasons are, we have taken the first step to enlist their interest and enthusiasm in helping to make the home what it should be.

It is the object of this lesson to show the purpose and universal need of the home, and the part which young people have in its making.

DIFFERENT KINDS OF HOMES

What do people live in? Why do we need houses?

Can you think of any people who do not live in houses?

The Indians used to have no houses. Did they have homes? What did they call them?

There are people in some hot countries that live under a flat roof made of boughs or straw held up by a pole at each corner. Would you call that a house? Is it a home?

Yes, and it may be a happy home, if the people who live in it are kind and helpful. (Describe the home of the Eskimo.)

HOMES OF ANIMALS

Do animals have houses? Do some that have no houses have homes?

What animals make their own houses?

What animals have houses built for them.

HOMES OF INSECTS

Sometimes we find insects and worms on goldenrod and other flowers. They stay there all night.

The goldenrod gives them a home and also a breakfast.

NEEDS OF THE HOME

What rooms do we have in our houses?

Which are the most useful rooms?

The Indian has no windows in his tent. How does he get air and sunlight? How do we get air and sunlight?

Sunlight and air are good friends to us. We need both in every part of our houses.

Why should the kitchen be kept very clean?

PIPE AND CIGAR SMOKE SPOILS THE AIR

Would a kitchen smell pleasant that was full of smoke from the stove? Pipe and tobacco smoke spoils the air of a room, and often makes the people who breathe it uncomfortable.

Is it pleasant to have tobacco smoke in any room? What do we need in our sleeping rooms at night?

CARE OF THE HOME AND YARD

What do we call the place in which we keep the dishes?

We have closets for many other things too. How can we make them look neat?

Some people who have a neat looking house have a very disorderly cellar. A damp, dirty cellar may make people ill. Cellars should be kept clean?

Mother may work all day to make the house neat, but it will not look neat at night if the children are not careful to keep it orderly.

What can you do to keep the house neat?

What can you do to keep the yard clean?

CARE OF THE SCHOOLROOM AND SIDEWALKS

The schoolroom is one of our homes. What can we do to keep it looking neat?

What can we do to keep the yard clean?

What can we do to keep the sidewalks clean? We should never spit upon the sidewalk.

People who chew tobacco often spit upon the sidewalk and make it filthy and disagreeable.

We should not forget to wipe our feet when we go indoors.

We need a happy home as well as a neat one.

What can we do to make the home happy?

THINGS TO REMEMBER

A happy home should be neat and clean.
We should speak kindly in it.
We should be helpful.



"This is my Sunday head of hair
All whirly, twirly curls,
A bow of ribbon tied with care
Like all the other girls."

THE HOME

THIRD YEAR

WHILE great advancement has been made in some sections of the country in improving dwellings, surroundings, and sanitation, we need to exercise care lest the home lose its hold upon the people.

Homemaking is a fine art, and the home should be the place where not only one's family can enter in and rest, but a place where "the stranger that is within our gates" may find rest and refreshment.

A few turbulent, thoughtless children may make what should be a solace and delight a place to be shunned.

Without preaching, we can interest the child in doing his part towards making the home.

PRIMITIVE HOMES

Of what do you think the first homes people ever had were made?

(Bring out the idea of living in a hollow tree, and resting in the branches of trees.)

Why would these homes not be comfortable?

Why were they better than none?

(Bring out the idea of dwelling in caves, of fastening the lower branches of the trees together to form a roof, and lead up to the wigwam, the log house, etc.)

People found it so comfortable to have houses that they kept on trying to make them better.

HOMES OF DIFFERENT PEOPLE

In many countries there are very beautiful houses. Some of them have cost thousands and thousands of dollars.

Who can tell what the home of the people who live in the desert is like?

The home of the Indian? the Eskimo? the people who always live on the water?

HOMES OF ANIMALS

Name some animals that care to have a home. (Speak of the labor and patience of the mother bird and other animals in making a home for their young.)

A HOUSE NOT ALWAYS A HOME

Almost every one can make or get a house to live in, but a house is not always a home.

Sometimes kings and other rich people have been glad to leave their fine palaces and go to a simple cottage where everything was peaceful.

Once there was a Queen of France (Marie Antoinette) who grew very tired of living in her palace where it was noisy and where she had little time to herself.

She asked the king to build her a cottage in a quiet place near Paris. She had watched the country people caring for their cows, making

butter and cheese and they seemed to be happier than she was.

The king built the cottage for her among beautiful trees.

She used to go often to this place, tend the cows and make butter. She liked to forget she was a queen.

PEOPLE CAN MAKE A HOME HAPPY OR UNHAPPY

We need to remember one thing. A house does not make us happy or unhappy. It is what the people who live in it do and say that makes home a pleasant or an unpleasant place.

Think of all the things you can do to make home a neat and comfortable place.

Do you like to hear babies cry? Sometimes they can not help it. What can you do for baby if mother is busy? Do you like to hear children cry? Sometimes they can not help crying. Every one is willing to excuse it at such times; but crying does not make the home pleasant.

The home people are often tired. What can you do then?

How should you close the door? How should you step?

If the baby or a person is asleep what can you do?

If you often forget things mother has asked you to do, does that help make a happy home?

Please tell me a few more things you can do to make home a happy place.

CARE OF THE YARD

How do you think the home yard should look? What can you do to make it look neat?

If no one threw papers into the streets, how much neater they would look.

There is a very busy man in the United States (Booker T. Washington) who is at the head of a large school. There are many buildings and workshops belonging to it. He allows no papers to be thrown about.

If he sees any, he will go himself and pick them up, no matter how much he has to do (Speak of marking fences and buildings.)

ALCOHOL MAKES UNHAPPY HOMES

Sometimes people who use drinks that contain alcohol make the home very unpleasant and uncomfortable for other people.

The money is needed for food and clothing. The mother and children are often hungry and cold. (If the school contains a child who comes from such a home, this part of the lesson should be given on a day when he or she is absent.)

THINGS TO REMEMBER

We can help make a happy home.

We can help keep the home clean.

We can help keep it in order.

We can help keep the yard clean.

We can speak kindly.

CLOTHING

THIRD YEAR

COVERING OF BIRDS

WITH what is the bird covered? How does it clean its feathers? It takes a bath and it also oils its feathers. It has oil in the skin which it takes in tiny drops with its bill and oils its feathers.

You wear a raincoat. The oil on the bird's feathers keeps the rain from wetting the bird's skin.

COVERING OF ANIMALS

Animals have the kind of covering they need.

You have learned that they have thicker hair in winter than in summer.

USE OF CLOTHING

Of what use is clothing to you? It keeps you warm and it protects the skin from dirt and storms. You learned last year that clothing does not make you warm, but keeps your body heat in.

I have written on the board the names of some of the different articles of clothing you wear.

MATERIAL FOR CLOTHING

We will see how many animals or plants have helped to give them to us. (The teacher may write the article of clothing, allowing the children to name the source of supply.)

hat or cap sheep, straw
 from the field (silk-
 worm for velvet hat),
 etc.

winter suit	sheep
summer suit	cotton or flax plant
winter dress	sheep
summer dress	cotton or flax plant
collar	cotton or flax plant
mittens	sheep
gloves	cotton plant; goat and kids, sheep, and some other animals
underwear	cotton plant and sheep
stockings	cotton plant and sheep
shoes	cow, ox, horse, goat
coats	sheep
rubber coat	rubber tree, cotton plant
ribbon	silk worm

LABOR REQUIRED

(Lead the children to appreciate the labor involved in the preparation of these materials.)

Animals and plants have given us many kinds of material for our clothing. Men and women have worked hard to make the wool and cotton into cloth, the skins into leather, or whatever we need.

After the material was ready to use, mother or some one worked busily to make our clothes.

CLOTHING NEEDS CARE

The best way to say "thank you" for our clothes is to take good care of them. We can try to keep them clean and not tear them.

LOOSE CLOTHING

Clothing should never be too tight in any part of the body. If it is, you should have it made larger.

Wet clothing and shoes should always be taken off and dried as soon as possible.

All clothing should be hung out in the sunshine once in awhile. Why should you not wear rubbers in the house?

(The teacher may speak of the frequent changing of underclothing if it seems desirable.)

THINGS TO REMEMBER

Many animals, plants, and people have helped to give us clothing.

We can try to keep it whole and clean.

We should not wear wet clothing or shoes.

Rubbers should not be worn in the house.



Ready for a good time.

The attention of our readers is called to the fact that bills for the SCHOOL PHYSIOLOGY JOURNAL are sent to subscribers only. No one who has not ordered the JOURNAL need fear that he will be called on to pay for it. If the JOURNAL comes to you regularly and you have not ordered it, it is being sent to you through the courtesy of some friend who wishes to provide you with its help in your school work. All subscriptions, if not renewed, are discontinued as soon as they expire.

Grammar
LessonsFIFTH OR
SIXTH YEAR

DIGESTION

FREDERICK the Great used to say that "an army moves on its stomach." The experience of the Surgeon-General of the Japanese Imperial Navy, Baron Takaki, has proved that an army not only moves on its stomach but wins victories against heavy odds.

When he entered the Japanese navy in the early 70's the dietetics on board the Japanese vessels were about like that of the junks and pirate craft of the eastern ocean. It was a common thing when a Japanese ship had been out only a week or two for half the men to be down sick, and not infrequently the captain would be obliged to help make sail.

It did not take the young surgeon-general long to see that if the Japanese were ever to become great naval fighters they must be so nourished that sickness would be banished and they would become capable of great endurance. He immediately began an elaborate series of experiments in diet which were so successful that in ten years, by rigid insistence on this new regime of rations, he had so increased nutrition that the men weighed on an average 8 pounds more than formerly, and disease was reduced to the minimum.

It was agreed by many Japanese officials at the close of the war with China that it was this increased efficiency that made it possible for the small Japanese fleet to defeat the North China squadron.

In the last analysis the man who succeeds is he man who can eat and digest well, for every vital organ depends upon nutrition, and nutrition depends upon the way in which the digestive apparatus does its work.

NEED OF FOOD

Begin the lesson with a discussion of the need of food and bring out the fact by questions and reference to books that foods are required for the growth and repair of the body and for the purpose of furnishing it energy.

Speak of the different parts of the body, such as the bones, muscles, nerves and blood, all of which need food, and point out that because the body has such diversified elements and needs it requires food containing different elements.

Having made it clear to the class why we need food, divide the class into three parts. Let one part write a menu for breakfast, a second part one for luncheon, and the third one for dinner.

Have the best of each set written on the board and see that the menus selected cover all the common sorts of food.

KINDS OF FOOD

By questions and reference to authorities make it clear to the class that although there are so many varieties of food there are really only three main classes: proteids or albuminous foods, fats, and carbohydrates such as sugar and starch.

Write the names of these three classes upon the board and under each the principal foods of that class. The teacher may increase the interest of the class by some simple experiments showing which foods contain starch, sugar, protein, etc. Or she may show little plates containing specimens of foods which furnish considerable quantities of a certain food principle such as:

Proteid. Lean meat, an egg, beans, and cheese, are examples of proteid with which nature makes repairs and forms new material.

Fat. Butter, fat meat, a bottle of olive oil will furnish types of those foods which are sources of fuel for the body.

Carbohydrate. As examples of food giving needed heat and energy show specimens of sugar, rice, and potatoes.

Which of these foods are usually cooked? Why?

The teacher should explain, if the books do not, that most foods are made more digestible by being cooked and many are more appetizing, and that a cheap cut of meat may be made to give much more food than the same amount of money put into a costly cut, if it is cooked properly.

Compare the foods with the bones, blood, or muscles, and show that although foods are to make new tissues, repair old ones, and furnish the force which keeps the body machine moving, they must be changed into such form that they can be dissolved and taken up by the parts of the body.

Speak of some things like tea and coffee which do not furnish nourishment and so are waste material. Any such substances make the body work hard for nothing and soon get it out of order.

Alcoholic beverages are in no sense a real food for, although they may be oxidized in the body and furnish some heat, the injury to the body more than counterbalances the slight energy they produce.

DIGESTION BY MOUTH AND TEETH

What is the first thing that must be done to the food to fit it for use in the body? If any child has visited a mill where grains are ground let him describe the way in which the stones move one upon another and grind the grain to flour. What have we for grinding hard foods?

Describe the teeth of the cow or horse. What sort of food do they eat? Have we any teeth similar to theirs? How many in each jaw?

What sort of teeth have the cat and dog? What sort of food do they eat? Do they need any grinders? Why not? Do we have teeth corresponding to theirs? How many in each jaw?

If we have grinding teeth like the vegetable-eating animals, and sharp, cutting teeth like the flesh-eating animals, what sorts of food would we seem to be fitted to eat?

Why is it necessary for people to have more than one set of teeth? If the books do not explain, the teacher may tell the children that every other part of the body can grow larger as the child grows, but the teeth can neither grow larger nor repair themselves, so the little baby teeth must be replaced by larger ones.

Describe the construction of a tooth and have a drawing made on the board. Discuss carefully the care of the teeth and show that this care, especially in childhood, must include the eating of bone-making food and abstinence from things which injure the growth of sound teeth, as well as washing the teeth carefully twice daily, and removing the bits of food from between them with a wooden or quill toothpick, and silk.

A recent editorial advises that we learn to eat slowly and thoroughly, as slow eating solves one of the problems of health; that in the eyes of doctors three things distinguish the American people especially, consumption, dyspepsia and

bad teeth, and all three of these things are intimately connected with the great national defect of too rapid eating.

Discuss this with the class and show that eating in a hurry often causes one to eat soft foods which do not give the teeth anything to do and thus they (the teeth) are weakened, that ill health is caused by an insufficient supply of good blood, and good blood can be produced only by good food ready to be absorbed.

Having discussed the structure, use, and care of the teeth take up the saliva.

What happens in the mouth when we think of some delicacy of which we are fond? Notice where the saliva comes from? How many places in the mouth give it out?

Let pupils chew pieces of cracker until they are dissolved, and note the sweet taste. What change has the saliva made in the starch of the cracker?

Explain to the children that starch is not easily dissolved so that it can be used in the body, but when the starch changes to sugar it is readily assimilated. Make it clear that if the mouth shirks its part all the other digestive machinery will have to do extra work.

Where does the food pass from the mouth? How does a bird swallow? How can a horse swallow when its head is lower than its stomach? Find out from books why the food does not pass down the windpipe which lies just back of the food pipe.



The picture of health.

GASTRIC DIGESTION

About how tall are most of the members of the class?

Some of them may be about five feet in height. Then they may know that this long food canal which starts at the mouth is about 25 feet long, for its length is generally about five times the height of the person. It is lined throughout with thin membranous skin similar to that in the mouth.

Let us see what pouches or glands are in this long canal. Show pictures from physiologies. What is the first one called? Let some of the children make drawings of the stomach, pancreas, and intestines upon the board.

What is the size of the stomach and how much does it hold? How much then ought

one to eat? Make it clear at this point that one should never eat all the stomach can hold.

What juice does the lining of the stomach give out? Explain that "gastric" means "of the stomach," so gastric juice is really juice of the stomach. What effect does this acid juice have upon the food? What kind of food does the gastric juice dissolve?

The following simple experiment will add interest to the lesson. At the drug store get a little bottle of pepsin in solid form and dissolve about one teaspoonful of it in half a teacup of warm water. Add four or five drops of hydrochloric acid and the mixture is like the gastric juice. Put some of this prepared gastric juice into a small, wide-mouthed bottle or test-tube, and add a little finely minced white of a hard boiled egg. Keep it warm, about 98 degrees Fah., and shake it gently from time to time. The egg will be dissolved in about an hour.

By what motion does the stomach keep the food mixing with the gastric juice? What doorkeeper has the stomach to keep the food in till it is dissolved? Explain, if the books do not, that when any unfit food, for instance, green apples, is put into the stomach it tries hard to digest it. It can not digest uncooked green apples because they have so much raw starch in them and the muscular walls contract faster and faster till the stomach aches with pain. They must either be thrown up or pass unchanged through the food canal.

Such strong condiments as mustard, pepper, pepper-sauce, and the like are harmful to the stomach. But nothing that can be put into the stomach is worse than alcoholic drinks.

To show how alcohol hinders digestion, prepare two other bottles or test-tubes as already explained, and into one with the egg and gastric juice put beer or wine, and into the other a small quantity of alcohol. Show the class how much longer the food is in digesting when alcohol is present. Put some gastric juice into a test-tube and add a little alcohol. Have the class note that the pepsin is precipitated. Find out from books what effect alcohol has on the lining of the stomach.

Emphasize the fact that although some alcoholic beverages are believed to aid digestion and give appetite, the contrary is really true. In this connection discuss with the class the quotations bearing upon this point given at the end of the lesson.

What is the effect on the stomach of eating between meals? Why should conversation at the table be cheerful? Why not drink ice-water with meals? Why is it injurious to skip some meals and eat very heartily at others? See that the class understand that the mouth, stomach and intestines all prepare themselves to pour

out their juices at certain times and work best when those times occur.

INTESTINAL DIGESTION

Describe the small intestine; the large intestine. What organs prepare juices which are poured into the intestines? Describe the pancreas; the liver. Place drawings of them upon the board. What juice is secreted by the pancreas? What kinds of food does it digest?

To show the effects of this juice procure a small quantity of pancreatin from the druggist. Dissolve a few grains in a pint of warm water and add a little common soda.

In one test-tube or wide-mouthed bottle put pancreatic juice and into it some bits of soft boiled white of egg, shreds of raw beef steak or crumbs of cheese. Keep it at a temperature of 98 degrees Fah., and note how these proteids are digested.

In a second tube, test its effect upon boiled starch.

Put pancreatic juice in a bottle or tube and add a little olive oil or fresh butter. Shake thoroughly and note that the oil has been changed to an emulsion. Lather is an emulsion and milk is another.

By these experiments it will be clear that the pancreatic juice is the most important of all, for it digests starch as the saliva does, and proteids as the gastric juice does, finishing any digestion they have left undone, and in addition digests the fats.

What other juices are mixed with the food? What effect does the bile have upon food? What is the digested food now called?

How is the food carried forward for so many feet? Of what use are the crosswise ridges in the intestines? Find out from the book what the villi are and make drawings of them upon the board. Explain how these villi suck up the chyle and how it is taken into the blood to be carried to every part of the body.

AUTHORITATIVE QUOTATIONS

ALCOHOL NOT A FOOD

What does it avail that a little alcohol burns in the body if in burning the mischief it does exceeds the nourishment it furnishes? One may no more speak of the nutritive effects of alcohol than of arsenic or other toxic substances. — A. FOREL, M. D. in Report of the VII International Anti-Alcohol Congress, Paris, 1899.

With alcohol, the individual can not do the work that he could with fat or sugar; he lives, as Rosemann shows, on the expenditure of good tissue, of his constitutional albumen.

Alcohol, therefore, can not be considered as a food or as a protective agent: in reality it

is only an excitant; under no pretext can it find a place in a rational diet.—Dr. PASCAULT, in *La Clairiere*.

No substance is able to undertake the double role of a food and a poison, and for alcohol no nutritive, but only toxic [poisonous] properties can be claimed.—MAX KASSOWITZ, M. D., University of Vienna.

IMPORTANCE OF THE TEETH

Without good teeth there can not be thorough mastication.

Without thorough mastication there can not be perfect digestion.

Without perfect digestion there can not be proper assimilation.

Without proper assimilation there can not be nutrition or health.

Without health what is life?

Hence the paramount importance of the teeth.—CHAS. H. VEO, M. D., Boston.

FOOD AND TEETH

If we do not furnish the teeth of the young that pabulum [food] they require, they can not possibly be built up. It is the outside of corn, oats, wheat, barley, and the like, or the bran, so-called, that we sift away and feed the swine that the teeth require for their proper nourishment.—*Dietetic and Hygienic Gazette*.

EVILS RESULT FROM HASTY EATING

The American people have become noted everywhere for their way of eating; cramming in haste all kinds and qualities of food into the stomach, not half masticated. Many evils result from this hasty manner of eating.

First, the food from improper mastication is not divided sufficiently for the digestive fluids to gain access and act properly on it.

Another evil of hasty eating is that it is likely to cause the individual to drink largely of fluids to wash the food into the stomach. Two evils result from this: large quantities of liquids of any kind delay digestion because they delay the action of the gastric juice. Its digestive

properties are weakened and the absorbents overtaxed.

Another evil most frequently indulged in is that of eating too frequently. Often the first meal is but partly digested when more food is crammed into the stomach, and this is often repeated every few hours from morning till late bedtime, the poor stomach thus having no rest. The eating of fruit, confectionery, sweetmeats, nuts, etc., between meals is very injurious. This practice often begins in childhood, and is continued to some extent through life.—WM. M. MASON, M. D., in *Dietetic and Hygienic Gazette*.

EFFECTS OF ALCOHOL ON DIGESTION

The moderate use of strong drinks is always unhealthful, even when the body is in a healthy condition. It does not do any good to the digestion, but even interferes with that process; . . . and evils which are usually attributed to other causes often result from their habitual use with moderate drinkers.—Testimony of Six Hundred Physicians of the Netherlands.

Even moderate doses of beer and wine serve to retard and disturb digestion.—G. VON BUNGE, M. D.

Sir William Roberts pointed out that the effect of alcohol is to

weaken, or at any rate to retard, the process of digestion. That being the case it is surely obvious that its use in cases of slow and imperfect digestion can scarcely be recommended.—G. SIMS WOODHEAD, M. D.

It is strange that wines have received such marked recognition as therapeutic agents, for experiments point to the fact that their power to inhibit digestion, salivary, gastric, and pancreatic, is out of all proportion to the amount of alcohol they contain.—HENRY MARTIN BRACHEN, University of Minnesota.

The ordinary use of the drug [nicotine] must be extremely destructive to the digestive process.—J. W. SEAVER, A. M., M. D.



"I'm to be Queen o' the May, mother,
I'm to be Queen o' the May."

School Physiology Journal

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MARY H. HUNT, EDITOR

HENRIETTA AMELIA MIRICK, Assistant Editor

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PROSPICE

Fear death?—to feel the fog in my throat,
The mist in my face,
When the snows begin, and the blasts denote
I am nearing the place,
The power of the night, the press of the storm,
The post of the foe;
Where he stands, the Arch Fear in a visible form,
Yet the strong man must go:
For the journey is done and the summit attained,
And the barriers fall,
Though a battle's to fight ere the guerdon be gained,
The reward of it all.
I was ever a fighter, so—one fight more,
The best and the last!
I would hate that death bandaged my eyes, and forebore,
And bade me creep past.
No! let me taste the whole of it, fare like my peers
The heroes of old,
Bear the brunt, in a minute pay glad life's arrears
Of pain, darkness, and cold.
For sudden the worst turns the best to the brave,
The black minute's at end,
And the elements' rage, the fiend-voices that rave,
Shall dwindle, shall blend,
Shall change, shall become first a peace out of pain,
Then a light
And with God be the rest!

R. BROWNING.

MARY HANCHETT HUNT

July 4, 1830. April 24, 1906.

WITH profound sorrow we announce the death of the editor in chief of the JOURNAL, Mrs. Mary H. Hunt, at her late residence, 23 Trull St., Boston, Mass.

Endowed by nature with a splendid constitution and robust health, Mrs. Hunt has been enabled to carry to fruition labors that would have been impossible otherwise; but for the past two years her physical strength has gradually grown less, and work that was before a delight came to be more and more of a burden.

Yet she never spared herself. The last public address given by Mrs. Hunt was before the State Teachers' Association of Nebraska in De-

cember, 1904, at the close of a long series of public engagements in many states. In April she went to Atlantic City for two months rest, hoping that as heretofore she would speedily regain her wonted vigor. When this did not come, she sought expert medical advice. Specialists pronounced the lameness creeping over her paraplegia, and declared it to be incurable.

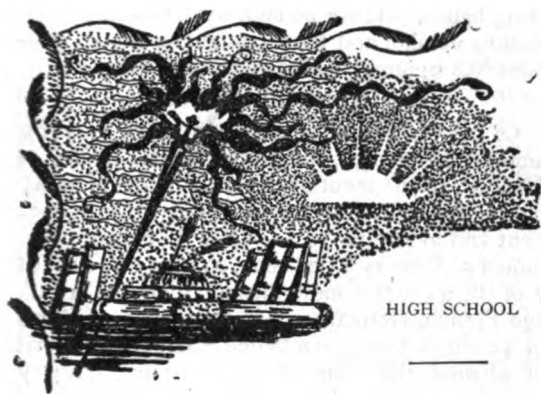
In spite of this verdict she determined to live, convinced that her work was not yet done. Step by step, inch by inch, she fought the last great fight, working up to the limit of her strength each day, using every means that medical science could devise to overcome or delay the bodily weakness that steadily increased. As long as she could hold pen or pencil she wrote, if but a few lines a day. When she could no longer write, she dictated to others till she was unable to speak. Then, for the first time, she felt that her work was done, and she longed to "go home" as ardently as she had before craved the opportunity to labor in the cause to which she had consecrated her life.

Inexpressibly as Mrs. Hunt will be missed in the Woman's Christian Temperance Union of which she was World and National Superintendent of the Department of Scientific Temperance Instruction, in the public press and on the platform, in the church, the home, and in the hearts of thousands who loyally followed her guidance and carried out the plans she formulated, we who have watched her long struggle with increasing weakness can not wish her back. She has nobly earned the "well done" which is hers. It remains for those who are left to carry on in every state in the Union and in the other countries of the world the scientific temperance instruction of all the children. And the letters and telegrams pouring in at the department headquarters are full of promise for the future of this great movement. Individuals and organizations alike are loyally pledging themselves to maintain and continue Mrs. Hunt's far-reaching work. This is the highest tribute to what she has done and is what she would have wished above all else.

The June issue of the JOURNAL will be a memorial number.

HENRIETTA AMELIA MIRICK.

The funeral service of Mrs. Hunt was held in Pilgrim Church, Dorchester, April 26, conducted by her pastor, Rev. Dr. Allbright, assisted by the Chairman of her Advisory Board, Rev. Dr. Plumb, her former pastor, Rev. Dr. Davis, and the Vice President at large of the National Woman's Christian Temperance Union, Miss Anna Gordon, after which she was laid to rest in the family lot at Forest Hills.



THE PATENT MEDICINE HABIT

A WRITER in a recent periodical says that "Education is one of the greatest preventives of ordinary disease."

During the last twenty years laws have gone into operation in all the states of the Union, which, by making the study of physiology and hygiene compulsory in all public schools, have been providing for such education as this writer mentions.

The results already observed amply justify the statement he makes, for not only has the increased gain in the healthfulness of the body physical been so marked that a national medical society of American physicians passed resolutions saying that they rejoice in "the evidence that there is better obedience to the laws of health and a growing sentiment in favor of public sanitation and total abstinence," but statistics show that in the decade 1890-1900 there was actually a gain of 4.1 years in the average length of life in the United States. The mental attitude towards disease has altogether changed. This is especially true on the part of the younger and more progressive people.

But not all have as yet learned nature's health lessons, and there are others who, knowing, have disobeyed, so that there are many thousands who are really ill and other thousands who believe themselves to be so.

Furthermore, they have yet to learn that "disease is not an entity to be killed by a shot from a professional [or an unprofessional] gun, but an effort of outraged nature to free itself from an incumbrance, and it should be aided, rather than hindered by the administration of any nerve irritant. There never will come a time when the laws of health can be evaded.

A few days before the lesson is to be taken up ask the members of the class to make some investigations along the line of patent medicine-using. Refer them to the recent series of articles published in *Collier's* and the *Ladies' Home Journal*, to the published accounts of the ef-

forts being made in several states to secure the passage of laws intended to do away with some of the most crying abuses of this evil, and to published analyses of different nostrums.*

Pupils should also examine the advertisements of the various preparations to be found in many newspapers, making a note of the number of diseases which these are guaranteed to cure and the probability of the truth of their assertions.

The day before the lesson, the teacher may write upon the board the quotations given above.

First, discuss the different ways in which education can help to keep us well, and bring out the principal hygienic rules upon which health depends. Make it clear to the class that *drugs never cure disease*. Nature alone has power to heal. In the hands of a skillful physician they may be made to assist, but they *never cure*.

Next, consider what ought to be done in cases of indisposition and sickness, bringing out the point that as illness is the result of unhygienic living, the first thing to be done is to discover if possible what laws of health have been violated and correct the errors which have brought about the sickness.

If the illness is serious and does not yield to hygienic treatment, the patient should consult a properly accredited physician who will be able to make a diagnosis of the case based upon knowledge of the symptoms and the idiosyncrasies of the patient's system.

Impress the class with the fact that no physician of repute exploits his medicines and cures by advertisement, for the ethics of his profession forbid it. If such advertisements appear they present *prima facie* evidence that the doctor (?) thus advertising is a quack who is seeking only to make money and has very little consideration for the health or life of the people.

WHY NOT TAKE NOSTRUMS

The patent medicine habit has assumed such proportions in our country that the legislature of North Dakota has honored itself by passing a law calculated to remove some of the most common abuses of the system, and a number of other states are seeking to place similar laws on their statute books.

That it is high time that citizens, patriotic journals, and legislatures should grapple with this growing evil is emphasized by a statement made by Mrs. Martha M. Allen, National Superintendent of the Department of Medical Temperance for the Woman's Christian Temperance Union, in a book published in 1900. She says that a careful compilation of manufacturers' an-

*"Reprint from the Annual Report of the Massachusetts State Board of Health." For copies apply to National Temperance Society and Publication House, 3 E. 14th St., New York City.

nouncements lists no less than 1,806 of these panaceas sold in open markets in which alcohol, opium, or other toxic drugs form constituent parts.

The sale of these poison-laden medicines to the amount of \$100,000,000 each year constitutes a grave menace to the health, sobriety and achieving ability of our American people, and promises a frightful harvest of alcoholics and "fiends" who might never have become such had the true nature of the remedies (?) sought been known.

Discuss with the class the results of their investigations and ask each member to give one or more reasons why patent or proprietary medicines ought not to be used.

Emphasize particularly the dangers of taking drugs, or medicines the contents of which are secret, except upon the prescription of a reliable physician. Point out that in most states there are stringent laws prohibiting any persons who have not completed a prescribed course of study, and are duly authorized, from treating the sick, and emphasize the necessity for such regulations for the protection of the public.

If the teacher thinks it wise, she may touch briefly upon the methods by which testimonials to patent medicines are obtained, the falsity of many of them, and the fact that although some firms advertise free advice and assert that all communications will be held "sacredly confidential," the letters received by them are often sold to testimonial brokers who in turn will sell them to any one at the rate of half a cent each. Young girls and boys, in particular, should be cautioned against writing to such firms.

CLASSES OF PATENT MEDICINES

Patent or proprietary medicines may be divided into three classes:

1. Those which are frauds but are not specially dangerous, except in delaying proper treatment, or to the pocket-book; examples of this class are Liquezone, Vitæ-Ore and some others.

2. Those which are more or less dangerous to health but form no drug habit. In this class may be placed hair restorers, most of which contain sugar of lead or some active lead compound, and cosmetics, the effects of which frequently depend upon corrosive sublimate or some other poisonous salt of mercury. Cases of serious poisoning are reported from the use of such articles. Most of the "blood purifiers" contain iodide of potassium, a medicine of doubtful virtue except as prescribed for particular cases. Shiloh's Consumption Cure is said to contain chloroform and prussic acid, and other medicines might be mentioned under this head.

3. Those medicines which are dangerous to life and most of which may and often do cause

drug habits. These include the medicines containing alcohol and those containing subtle poisons like opium, cocaine and acetanilid.

THE ALCOHOLIC MEDICINES

Of the "bracers," or those containing varying amounts of alcohol, the Massachusetts Board of Health (1896) mentions 67 with contents of alcohol ranging from 5.24 per cent to 47.5 per cent and averaging 18.4. Only 8 of these contained as little as 8 per cent, so about 6 out of 7 of them contain more alcohol than the average French, German or American wines. Each of 42 out of the 67 contained a larger per cent of alcohol than the strongest wine (sherry 17.5 per cent), and 5 contained more alcohol than whiskey (35 per cent).

The best known and most widely sold of the "bracers" are Peruna 28.59 per cent of alcohol, Lydia Pinkham's Vegetable Compound 20.61 per cent, Hood's Sarsaparilla 18.8 per cent, and Paine's Celery Compound 21 per cent.

Duffy's Pure Malt "Medicinal" Whiskey which has been lauded by its manufacturers as a remedy for lung and throat diseases, is of course just common whiskey. It is of cheap grade, too, for it is sold over the bar of saloons for only 85 cents per quart.

S. H. Adams in *Collier's* says it is made by a subsidiary concern of the New York and Kentucky Distilling Company, manufacturers of standard whiskeys, which also leases, owns, and controls another "bracer," Warner's Safe Cure, together with all the other Warner remedies.

Another sort of the preparations, the malt extracts, properly belong with the medicines or so-called tonics which may produce alcoholic appetite. These are largely advertised as the most nourishing of liquid foods and a necessity to those in an anæmic condition.

The teacher should point out first, that plenty of pure air and deep breathing, exercise, and plain nourishing food are the best remedies for poor blood; second, that malt extracts are really the dregs of the beer and do not contain nearly so much nourishment as the barley; and third, that according to S. P. Sharples, Massachusetts' "State Assayer" in 1897, an examination of 35 samples of malt extracts bought in original packages in open market showed from 4.27 per cent to 9.86 per cent alcohol, and averaged 6.23 per cent, or about the same as porter (6.63 per cent). This is about 2 per cent more alcohol than is in ordinary beers.

When it is remembered that alcohol, even in small quantities, has the power to create an appetite which may become uncontrollable, it is apparent that taking these alcoholic panaceas as directed in doses varying from one to four times a day, "increased as needed," may make, and often has made drunkards of its victims.

SUBTLE POISONS—DRUG HABITS

Under this head the class may discuss the main classes of nostrums which, while not so numerous nor as yet so largely used as those in the alcoholic list, yet constitute an immediate peril to life since they contain such deadly drugs that overdoses producing death are frequent. Moreover, when these drug habits are formed they may be more demoralizing to health and more difficult to conquer than alcoholism.

The teacher should explain also that many people, unknown to themselves, have weak hearts or defective kidneys, hence the use of powerful drugs, except upon the prescription of a physician, is always more or less dangerous.

The first class of medicines may include soothing syrups and cough and consumption remedies, most of which contain some form of morphine or opium. Of these the best known are Mrs. Winslow's Soothing Syrup and Kopp's Baby Friend, Dr. King's New Discovery for Consumption, and Dr. Bull's Cough Syrup, all of which contain opiates.

In this connection emphasize the fact that if preparations containing any form of opium are given many times in infancy or early childhood there is the gravest danger that when these children become young men and women they will be strongly predisposed to the use of narcotics, as well as very likely to suffer from neurasthenia and diseases of the digestive organs.

The catarrh cures (?), nearly all of which depend upon cocaine for their main ingredient and selling quality, may be considered in the second class. Birney's Catarrh Powder, Dr. Cole's Catarrh Cure, Dr. Gray's Catarrh Powder, and Crown Catarrh Powder are most in demand, and some of these are said to contain as high as 4 per cent of cocaine. So many cocaine fiends were made in Chicago that the city passed an ordinance forbidding the sale of cocaine catarrh powders, and Illinois has a similar law.

The third class, and in some respects the most dangerous, especially to students, is the increasingly large family of headache tablets and powders. These nearly all depend upon their

large content of acetanilid, a powerful heart depressant which, as Samuel Hopkins Adams says, is prone to remove the cause of the symptoms by putting a complete stop to the heart.

The United States Pharmacopoeia dose of acetanilid is 4 grains; 5 grains have been known to produce fatal results. Bromo-Seltzer, often used as a bracer by fatigued brain workers, if taken in the prescribed dose of a heaping teaspoonful contains 10 grains of acetanilid.

A leading periodical prints the names and addresses of 22 persons, men and women, who died from the effects of bracers or headache medicines containing this drug.

Orangnine, Bromo-Seltzer, Megrimine, Anti-Kamnia, Phenalgin, Cephalgin, and several others, as well as most of the drug-store headache cures, are composed largely of acetanilid. These nostrums thin the blood, depress the heart, and in many cases form drug habits.



"When she puts her arms around my neck and coos in glee,
She's worth uncounted millions to her mother
and to me."

AUTHORITATIVE
QUOTATIONSDANGER OF USING
NOSTRUMS

In my experience I have known of men filling drunkards' graves who learned to drink taking some advertised bitters as legitimate medicine. It would be hard to estimate the number of young brains ruined, and the maturer opium wrecks from nostrums of this nature. I could write a volume on the mischief that is being done every day all over the land, by the thou-

sands of miserable frauds that are being poured down the throats of not only ignorant people, but, alas, intelligent ones, too.—E. A. CRAIGHILL, M. D., President of Virginia State Pharmaceutical Association.

The unnatural craving felt by the drinker is shared by all who become slaves to a narcotic. It is probably due to the fact that these poisons enter into actual contact with the nerve substance. This has been shown to be true of alcohol, and although the changes produced by the other narcotics are not known, the similarity of their effect upon the nervous system suggests that they may act in the same way. A combination between the alcohol and the nerve-

matter of cells and fibers renders the composition of the nervous substance different from normal, but the body accustoms itself, after awhile, to the new order of things.

When the alcohol has disappeared from the tissues of the body, the nerve-cells are left in a state of disorganization. Disorganization of cell structure means the beginning of death, and the whole body sends up a cry for relief. And the relief must be immediate and easily attained in order to abate suffering. This craving for narcotics is the most terrible fact connected with their use.—ROGER S. TRACY, M. D., Registrar of Records of the New York City Health Department, in *Outlines of Anatomy, Physiology, and Hygiene*.

COMPARATIVE EFFECTS OF MORPHINE AND ALCOHOL

The morphine taker becomes practically an incurable in five years. The alcoholic user of spirits may continue eight or ten years, before he reaches incurable stages. This will depend on the free intervals between the time of using spirits. When he becomes incurable he may abstain, but the injured brain and nervous system never recover.—*Journal of Inebriety*.

DANGERS OF OPIUM POISONING

Among infants and in the early years of life, soothing syrups are the cause of untold misery, for seeds are doubtless sown in infancy only to bear the most pernicious fruit in adult life. I believe that stringent legal measures should be immediately taken to stop the sale of so-called soothing syrups containing opium, morphia or codeine.—*Report of Massachusetts State Board of Health, 1888*.

In my studies of the heredity of all alcoholic and opium inebriety, about 10 per cent give some history of drugging in infancy. Paregoric and laudanum are the most common. No form of opium should be given to infants or children. While the effects of continuous sedation may be overcome by correct living, the cell injury and perversion of function are never repaired. Where soothing syrups and prescriptions for seductive effects have been used for a long time, the suspicion is strong that the opium diathesis [predisposition] has been created. I wish to emphasize that the use of opium and its alkaloids in infancy will, in a large proportion of cases, create a diathesis or predisposition to its use in later life. This predisposition is manifest in irritation and exhaustion, with intense, uncontrollable impulses for relief.—T. D. CROTHERS, M. D., in *Journal of Amer. Med. Ass'n*.

COCAINE DRUGGING

Cocaine is given for some of the distressing catarrhs and nasal troubles which are so painful.

Its narcotic action on an inflamed mucous membrane is very marked, and is quickly followed by a certain fascination to continue the drug which is difficult to control. The possibility of not being able to give up the drug never occurs until symptoms of obvious poisoning appear, and then, in many cases, the mind has lost all power of appreciating its real condition.—Editorial in *Journal of Inebriety*, April, 1897.

While opium is injurious and in all ways a curse to the patient, it is not so rapidly deleterious as chloral and cocaine. Their course is steadily downward until the nervous system is a complete wreck.—L. D. WHITE, M. D.

Among the symptoms due to cocaine poisoning are extreme pallor, profuse perspiration, unconsciousness, frequent, feeble, irregular pulse; dizziness, nausea; more rarely, blindness, deafness, muscular rigidity, paralysis, and convulsive or suspended respiration.—W. SCHEPPEGRELL, M. D.

ACETANILID POISONING

Obscurity as to the real nature of the drug, fostered by careful deception, is the safeguard of the acetanilid vender. Were its perilous quality known, the headache powder would hardly be so widely used. And were the even more important fact that the use of these powders becomes a habit, akin to the opium or cocaine, habits, understood by the public, the repeated sales which are the basis of Orangeine's [and others] prosperity would undoubtedly be greatly cut down. Did it [and others] not foster its own demand it would hardly be profitable.—*Collier's Weekly*, Dec. 2, 1905.

Last July an 18 year old Philadelphia girl got a box of Orangeine powders at a drug store, having been told they would cure headache. Following the printed advice she took two powders. In three hours she was dead.—*Collier's Weekly*, Dec. 2, 1905.

PHYSIOLOGY TOPICS FOR MAY

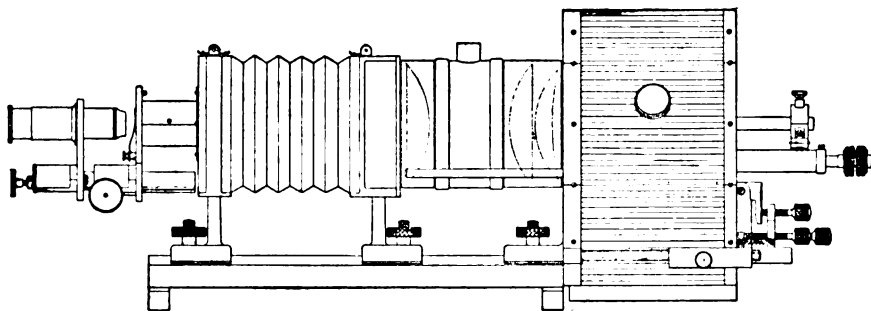
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SALUTE THE SOUL THAT DARES

BY ELIZABETH STUART PHELPS-WARD

Salute the soul that dares, though royal born,
Become knight errant of the hope forlorn ;

Disdain the sneer that curls the curving lip,
Arrest a world's doubt by the scepter tip.

As surely as the skies the caverns crown,
The noble deed shall live the base thought down.

As certain as the dawn to stir the dark,
The arrow of the age flies to the mark.

Dividing years, and years to be shall know
Whose was the hand that held and bent the bow.

Now, then, and ever well the great Law rears :
All souls high-born salute the Soul that dares.

AN IMPERISHABLE RECORD

BY MARY F. LOVELL

(Acting Superintendent Scientific Temperance Instruction)

WHAT is here presented is largely the result of personal knowledge, as the writer had the honor to be Mrs. Mary H. Hunt's friend for a period of twenty-one years. As the record of her remarkable work becomes more widely known (what it cost her can never be known), it will be recognized as unique in the history of nations.

In the years 1872-76, while assisting the studies of her son, then a student in the Massachusetts Institute of Technology, Mrs. Hunt's attention was drawn to the subject of the origin and nature of alcohol and the effects on the human system of beverages containing it, as shown by scientific research. She found herself very deeply interested in the subject—her own previous studies in chemistry being a contributing cause—and the idea that the true nature of alcoholic drinks, stimulants and narcotics and their effects on the human system should, in connection with physiology and the general laws of health, be taught as a preventive measure in the common schools, came to her.

She communicated her thought on the subject to a friend engaged in school work, but at that time he gave her little encouragement, saying that such a study could not be added to the general public school curriculum except under law for each state, and that such laws would be

most difficult to obtain. Nevertheless, her soul haunted "by that invisible power that can shape destiny for one obedient to the vision," she continued her study of the nature and effects of alcohol as shown in the work of European investigators, and bided her time.

At last, in 1879, after having given some public addresses on the subject, Mrs. Hunt laid her burden of conviction before Miss Willard who was at that time her guest, and she suggested that Mrs. Hunt attend the next convention of the Woman's Christian Temperance Union to be held at Indianapolis, and thought that a standing committee would be appointed through which Mrs. Hunt could work out her ideas. This was done, but the following year the committee was, at Mrs. Hunt's request, merged into a department, that of Scientific Temperance Instruction. She was appointed superintendent.

Then began a unique and most magnificently conducted educational campaign, the like of which the world had not before seen. A letter written last February from Germany, by a Boston gentleman, expressed the opinion that "future generations of Americans will believe what many foreigners seem to think now, that Mrs. Hunt's success in the matter of scientific temperance instruction embodies the most important piece of constructive statesmanship which our day has brought forth."

Mrs. Hunt could not have succeeded in her aims alone any more than a general could conduct a battle without an army, but the general must know how to use his army. The Woman's Christian Temperance Union, and to some extent other bodies, worked under Mrs. Hunt's guidance and suggestion, and she was the wise general who never faltered nor hesitated.

In 1882, the first law prescribing compulsory instruction in the scientific reasons for total abstinence was passed in the state of Vermont. In 1901, the last law of the same kind was passed in the state of Georgia. Thus within twenty years, under the guidance of the extraordinary woman whose mighty mind shaped the course of things, the whole immense area of the United States was covered by laws providing that the pupils in all public schools shall receive warning teaching as to the true nature of alcohol and other narcotics.

But the half is not told. When the law of Vermont was enacted there was not a text-book in existence with which to carry out its provisions. The truths required to be taught were contained in advanced scientific works unsuited

to school use. Publishers to whom Mrs. Hunt had appealed to issue books adapted to child understanding told her there would be no market for them, as legislatures would not continue to pass laws requiring the teaching. With unwavering faith she persevered, as it was her intention that legislatures should pass such laws, and by the time (1885) that the great state of Pennsylvania had enacted its temperance education law, she had induced one school book firm to publish a series of three books on physiology and hygiene which contained in each division of the subject, and in properly graded form, the scientific facts she desired taught. The preparation of these books cost Mrs. Hunt personally six thousand dollars, money which she provided at great personal sacrifice.

And now began a time of very serious trouble. Securing the laws in those states which had enacted them had been a herculean task which was accomplished only through constant public speaking, newspaper articles, letters, and petitions to legislatures in immense numbers, addresses before legislative committees, appeals to clergymen and educators. The stir thus made, and the actual passing of the laws convinced school book publishers that they were mistaken, that there was a rapidly opening market for books on physiology and hygiene.

Without consulting Mrs. Hunt, though she was the cause of their opportunity, they issued hastily prepared books which were faulty in the extreme, and worse than valueless as a means of teaching the truths of science concerning alcohol and other narcotics. Mrs. Hunt—the Woman's Christian Temperance Union co-operating with her—opposed the introduction of these defective books into schools as an injustice to the children and a means of defeating the end for which they had so earnestly labored.

The disappointed publishers retaliated. The Woman's Christian Temperance Union had formally indorsed, through Mrs. Hunt, the one well prepared series, and they recommended the same to school boards. The "book job" slander was started by the angry publishers and industriously circulated by their agents and those of the liquor power, which by this time understood the serious menace of Mrs. Hunt's work. The malignity of the attack was so great and far reaching that only one with the pure motives and utter devotion of this great woman would have stood firm under the shock. She not only stood firm but said that a standard of scientific accuracy for text-books on the subject must be established, and that publishers must be asked to revise their defective books to this standard. She prepared the form and matter of the standard, and the Woman's Christian Temperance Union formally adopted it.

The publishers now found strong opposition to the sale of their books. School boards and educators learned through the untiring energy, prompted by Mrs. Hunt, of the women of the Woman's Christian Temperance Union, why they were objectionable, and in many instances refused them. Some of the publishers opened communication with Mrs. Hunt, and submitted their books for revision under her direction.

About this time the present writer paid a visit to one of the leading publishing houses which had signified a wish to come to terms, and held a conference with the senior member of the firm, a man who held the position of elder in his church, and who was of supposedly decent social position. His interviewer referred to the shameful book job slander, and remarked upon the fact that his firm knew very well that it contained no grain of truth. His reply, given with a bland smile, was, "Oh, yes, *but we worked it for all it was worth!*"

This person (since dead and gone to his place), had a rather singular name, but even this could not save him from oblivion, but the woman whom he dared to slander has received and will receive honor and respectful admiration from the greatest and best in all lands where her name and work shall become known.

In the years that have passed many publishers have submitted their books to Mrs. Hunt for revision, and owing to her constant research (aided by a corps of assistants) the books indorsed by her committee are scientifically up-to-date and in other respects the best of their kind. Ingenious attacks upon their accuracy, sometimes plainly prompted by the liquor traffic, and sometimes by motives not so apparent to the general observer, as in the case of the Atwater findings and the Reports of the Committee of Fifty—have been repeatedly refuted.

These books, as well as others more lately written, have been translated into Spanish, Icelandic, Chinese, Finnish, Swedish, Hawaiian, and Japanese, also into three Indian dialects; and a German edition of one of the later series is being prepared which, when ready, will, by imperial decree, be studied by children in the elementary schools of Germany. One of the smaller indorsed physiologies has been published serially in the Portuguese language in Brazil.

As a result of our country's example, scientific temperance instruction is now given to some extent in the schools of Australia, New Zealand, Japan, China, British India, South Africa, Egypt, and most European countries, including Norway, Sweden, Great Britain and Ireland, Germany, France, Austro-Hungary, Switzerland, Denmark and Holland. On this continent it is given in some schools of Canada, and to some extent in Mexico, Chili, the Baha-

mas, besides Cuba, Porto Rico and Jamaica. Chili has a temperance education law modeled in some respects on our national law.

In February 1904, after Mrs. Hunt's last visit to Europe, upwards of 15,000 physicians in Great Britain and Ireland, practically the entire medical profession of the United Kingdom, petitioned for compulsory education in hygiene and temperance like that required in the United States, for their public elementary schools, and a committee representing these petitioners recommended and sent out for the schools of the United Kingdom a Syllabus of topics based on the Course of Study prepared by Mrs. Hunt.

Reference has been made to the admiration excited abroad by her wonderful achievements. This was very marked at the Anti-Alcohol Congress held in Bremen, Germany, in 1903. A request had been sent by the officers of the Congress to President Roosevelt that the United States be represented in the Congress, and that, if possible, Mrs. Hunt be the representative. The President referred this to Secretary Hay who sent Mrs. Hunt a letter of introduction addressed to the diplomatic and consular officers of the United States, bespeaking their good offices in connection with her mission. After the close of the Congress, in which Mrs. Hunt made a profound impression, Hon. Charlemagne Tower, our Ambassador to Germany, arranged an interview for her with the Prussian Minister of Education. An important result of that interview has already been mentioned.

Mrs. Hunt next received a telegram summoning her and a lady who was with her to the Royal Palace at Potsdam, where the German Empress wished to receive them. Her Majesty greeted them with extended hand and a charming smile, and assigned Mrs. Hunt a seat on the sofa at the right of her own chair. In answer to her questions Mrs. Hunt told the story of the origin and progress of the movement which had put temperance education laws upon the statute books of the American nation, requiring that the 22,000,000 future men and women of the country should study with other

laws of health, those that teach the physiological reasons for total abstinence.

She explained the work of the Woman's Christian Temperance Union, and showed that it watches continually to see that the children get this particular education. She spoke of Germany, its past and possible future; of the good Queen Louise and the picture of her in the Hohenzollern Museum representing her visit to Pestalozzi's school, and saying, "We must teach the people." Then she showed how to another woman now on the throne of Germany had come the opportunity to extend a fostering

hand to a system of education that would free the Germany of the future from the tyranny of alcohol. The Empress responded with quick and intelligent sympathy.

In conclusion it may be said that not only was Mrs. Hunt's inestimable work purely gratuitous, but she bore the main burden of securing its support. Its cost has been over eight thousand dollars annually, of which the Woman's Christian Temperance Union could give only a few hundreds. The rest Mrs. Hunt was herself obliged to raise.

She freely sacrificed her time, her convenience, her freedom; even a brief retirement when death came to those she loved. On the morning of the day of the death (in the afternoon) of her only and most beloved son, with a heart torn with grief, she yet fulfilled an engagement to make an address, and made it well.

Truly of her it may be said that she loved the Lord her God with all her heart, and with all her soul, and with all her mind; and her neighbor as herself. Much more than herself did she love the children of this land. Happy are they who have understood and appreciated her. Thrice happy are they whom she honored with the title of friend.

The star of hope for the temperance reform stands over the schoolhouse



MARY HANCHETT HUNT

If we save the children today, we shall have saved the nation tomorrow

"Servant of God, well done!

Rest from thy loved employ:
The battle fought, the victory won,
Enter thy Master's joy!"

HE GIVETH HIS BELOVED SLEEP

BY REV. W. H. ALLBRIGHT, D. D.

"So He giveth his beloved sleep."

THE word "so" sometimes expresses intensity of purpose and of devotion, as when it is written, "God so loved the world." At other times it expresses manner, as here, where a thoughtful tenderness and affection are suggested as to the way He deals with those whom He cherishes and loves. God not only gives his beloved sleep, but He gives it to them in a gracious manner.

It has been so in this instance. Sleep has come not after violence and distress, not after tumult and pain, but gently and mercifully, as the toilworn servant comes to repose after the work of the day is done; as the sun sinks to its setting after the brilliance and benignity of the day's service is accomplished.

Up to the last two or three days of her remarkable career, our friend, Mrs. Hunt, had preserved to her all her faculties of mind and sense. The flowers that were sent to her by loving friends charmed her eyes with their beauty, and revived her with their fragrance. Her sight was retained in its wonderful clearness until the very last days of her exacting service. She needed no artificial aids such as some of us find to be indispensable. Her hearing was as acute as in the days of her girlhood. Her discernment and judgment held their regal sway until the end. She came to the close of this earthly life with the composure befitting a great soul. In the consciousness of all that was transpiring around her, transacting affairs, doing up to the last bit of strength, and almost the last moment of life, Mrs. Hunt at length fell asleep, assured that God in Christ was ordering all things well for her, and the things in which she was so deeply concerned.

To her pastor, called to her bedside, to others, members of her Advisory Board, and lifelong friends, she said, "Talk to me about heaven." This is the language of those who are letting go of earth. Mrs. Hunt was consciously on the border land. She expected soon to cross the hidden line which separates earth from heaven. So it is that God prepares his loved ones for the beatific vision. "So He giveth his beloved sleep."

About twelve years ago, in the prime of her splendid womanhood, in the midst of her brilliant services for the cause of scientific temperance education, Mrs. Hunt came to Dorchester, came to be a member of Pilgrim Church. Her presence among us could not be obscured. Her personality was powerful and commanding. Her nature was full of resources and accomplishment. Big things were in her brain. She was

built on lines of might. Her character was as strong as her service was eminent.

Until the last year, Mrs. Hunt, when present in Dorchester, was an attendant and participant at the midweek prayer and conference meeting. When she spoke, we gave attention. When she prayed, we drew near the throne of grace. Speaking, she spoke as a seer, with penetration and elevation. Her mind took in great horizons. Questions of national import were familiar to her. She anticipated and grasped them with statesmanlike acumen. Education, temperance, morals, these things she had mastered.

She was intensely patriotic. It was in her blood. She was a daughter of the Mayflower and the Revolution. The nation was on her heart. The children of today not only, but of generations to come, lived in her ideals and sympathies.

To the country she loved so well Mrs. Hunt gave a soldier son, a captain of artillery with his mother's courage and consecration. That son became a sacrifice for his country in the Spanish-American war. The event was a mother's joy and a mother's pain. From that day forward life for her was lived under another hue. The burden became heavier because, in some sense, borne alone.

Nature overtaxed began to yield. A splendid physique, that erstwhile knew no tire or wear, gave signs of overdraft and limitation. Little by little, step by step, the commander began to come under command.

The end is all glorious. Serene, strong, triumphant, she has written her record into the history and life of the nation and the world, and her memory and fame are secure as they will be imperishable.

"Servant of God, well done."

"So He giveth his beloved sleep."

"The loss to your own organization and to the cause of temperance everywhere cannot be measured. No woman in the history of our country has done more for this and coming generations. Her name should be sacred in every home and in the heart of every child. She was great in the highest qualities of both mind and heart. By her amazing ability and unselfish and indefatigable exertions she accomplished a work in every state in the union that will redound to her honor for untold generations. Happily she was spared to see something of the inestimable blessing of her labor both in this and other lands.—D. STUART DODGE, D. D., President National Temperance Society.

The Presbyterian Church mourns the loss of one of the greatest women of the age, Read Luke VIII : 52, X : 42, Revelation XIV : 13.—JOHN F. HILL, D. D., Secretary.

MRS. HUNT'S CALL TO THE WORK

BY REV. PERLEY B. DAVIS

Formerly Pastor First Congregational Church,
Hyde Park, Massachusetts.

MY acquaintance with Mrs. Mary H. Hunt began in the spring of 1867, when I became pastor of the First Congregational Church of Hyde Park, Massachusetts. She was one of a band of noble, praying women whose influence in the church was conspicuous.

Mrs. Hunt's fine education, her rare qualifications, both natural and acquired, her remarkable skill as an organizer, her keenness of perception, her forcible utterance, and her pre-eminent ability to impress other minds, gave her the place of a recognized leader. Severe disappointments in her family, along financial lines, deepened greatly her religious character.

Standing, as it seemed to her, very near the Celestial City, its doors were not ready to be opened to her until she could enter with the record of a more consecrated life and self-sacrificing service. She turned her face back to earth with the promise that, if spared, she would be faithful to whatever trust should be committed to her.

Gradually health and strength were restored. Her absorbing inquiry now was, "Lord, what wilt Thou have me to do?" By unmistakable providences the path opened. She recognized a Divine leader. God had been preparing the metal in the crucible. Her talents and acquirements were to find ample scope for exercise, her lessons in the school of discipline wide field for expression. She clearly foresaw struggle, sacrifice, opposition; but she willingly followed the pillar of cloud and fire.

As the river needs no guide to the sea, Mrs.



Hope Cottage, Hyde Park, Mass.
The birthplace of the temperance education movement

She was shut up to God. Prayer and the study of the Bible became to her vital elements, the atmosphere of her life.

Her pastor, on one occasion, inquired of her if the thought had ever entered her mind that a wider range of influence might be opened to her than could be afforded within the sphere of a local church. This, as she afterwards said, was the first time such an idea had come to her.

Soon she was taken seriously ill. Her life seemed ebbing away. While lying in an apparently unconscious state there came to her, as she later stated, a vivid, and to some extent, upbraiding, retrospect of her past life; remembrances, not of positive wrong committed, but of opportunities of serving God and humanity she had only partially embraced, of talents she had not fully employed, and of sacrifices she had not been wholly willing to make.

Hunt needed none but the Infinite to direct her path. Her reliance was upon God. This made her confident in judgment, pronounced in opinion, unswerving in method. She was building according to the pattern shown in the mount.

Such answers to prayer as have been witnessed in her experience have been seldom realized. The evidences that a Divine Force was with her, and giving success to her work, were unmistakable. Those who opposed her cause found themselves fighting against God. Her efforts mark the greatest movement along the lines of temperance the world has ever seen.

In this, however, Mrs. Hunt was but an *instrument*. The *Agent* was Divine.

The instrument has now fallen. The *Agent* remains. "God buries his workmen but carries forward his work."

MRS. MARY H. HUNT

BY REV. ALBERT H. PLUMB, D. D.

Chairman Advisory Board of the Department of Scientific Temperance Instruction of the Woman's Christian Temperance Union

WHEN we look at Mrs. Hunt as rendering effective service for the kingdom of God—and that is the highest kind of distinction—we see certain characteristics existing in rare perfection. For instance, mark her strong faith in the wisdom and safety of following the providential guidance given to a prayerful consecrated soul, working along the lines of scientific truth. Success ultimately comes to those whose efforts are in harmony with the facts of the universe.

Some seem to act as if this were Satan's world, and, as if, in order to get on in any project, we must invoke his aid and adopt the principles by which he rules. He told our Lord of a short and easy way to secure success. "There is no need of a bitter and painful struggle through the ages to establish thy reign. I will give thee all the kingdoms of the world at once, if thou wilt only for one moment acknowledge my authority. I will call off my hosts and give thee the whole thing now, as I know I must in the end, if thou wilt simply recognize my right for a single instant. All these things will I give thee if thou wilt fall down and worship me."

Not only did the devil thus ask an impossible thing for a holy being to grant—for "it is written, thou shalt worship the Lord thy God, and him only shalt thou serve,"—but he promised an impossible thing for an unholy being to give. The world with all its glory was not Satan's to deliver to any one, and never will be.

Yet every day people are led by the arch-deceiver to believe this lie, and to compromise with wrong,—to accept positions which they know are inconsistent with the facts in the case.

Mrs. Hunt never did this. She believed that moral law in the spiritual world, and economic law in the physical world, are from the same hand. The entire universe is under the sovereignty of a holy God. As her friend, the late Dr. Joseph Cook, used to say: "There must be a best way to live, and it must be best to live the best way, and the best way necessitates instant, total, irreversible surrender to the imperial demand of the best we know, the truth, the great realities of our nature and environment."

This was why she was always serene in the midst of storms of opposition, misrepresentation and personal abuse, tranquil always, though the vigilant and virulent liquor power dogged her footsteps into every legislative hall in our land; though many respectable people, timid and fearful of innovation, strove to throw contempt on her mission, and on her motives as well.

One of her earliest public addresses on this great interest was made in the Walnut Avenue Church, Boston. As I heard her then, and as I have heard her since, on many a memorable occasion, in great popular assemblies or before legislative committees, I have never failed to mark this supreme confidence in the impregnability of her position: teach the truth, let the truth be known, that it may have free course, and be glorified, as ultimately it assuredly will.

In the Onyx Chamber of the Albany Capitol, in 1895, when confronted with a large number of school officials, the state superintendent at their head, and with many doubting philanthropists, in strange alliance with the destructive advocates of drink, declaring that it would be impossible to run the schools on her plan, she calmly pointed to precisely the same objections urged in Pennsylvania five years before, and then she produced multitudinous testimonies from the school authorities of that state, showing that the law enacted there then, had for years been working well.

The eight hundred thousand petitioners, who had called her to their aid, gained all they asked. The Ainsworth law was overwhelmingly carried, and after it had been several years in operation, the large and reliable New York State Committee for Scientific Temperance Instruction, which had led in securing the law, reported from extensive inquiries that it was widely approved by the people because of its manifest excellent results.

It was the invincible power of God's truth in natural law, the force of the better reason on which she always relied, and not in vain. She saw state after state wheel into line, till the entire nation of eighty millions stood before the world, in vast and solemn array, commanding that their school children shall be taught how science warns them against intoxicating drinks. It was what she had expected. Nor was she surprised in her last hours, though the news greatly cheered her soul, to learn that precisely the measures she had carried in America, were being adopted in England and Germany, because their most learned authorities recognized that they were in harmony with the handwriting of God in the constitution of man.

Another prominent feature of Mrs. Hunt's character was her generous recognition and warm Christian appreciation of the great host of praying women associated with her, without whose effective co-operation all her efforts had been in vain, and also of the great numbers of eminent men, scientists, physicians, teachers, reformers, and statesmen, who responded to the claims of the cause she represented, and became its advocates and friends.

As the battle raged from state to state, she

never tired of sounding the praises of the noble men and women who rallied around her everywhere, and who threw their vast influence in favor of this great reform. It was not personal fame but the advancement of this humane and philanthropic undertaking which was her heart's desire, and the more potent and conspicuous any of her allies became, the greater her joy.

In the late war with Spain, how derogatory to our patriotism, how humiliating to human nature, were the petty jealousies of certain officers in our army and navy, and the partisan intrigues of their friends. General Grant, in the greater events of his time, proved himself too great a soul to stoop to such meannesses, and nothing delighted him more than to make hearty acknowledgment of the services of Sheridan and Sherman and Thomas and other worthies who aided our country's cause.

Sympathy for suffering humanity is a worthy motive in all philanthropic endeavors. Mrs. Hunt's kind heart throbbed with love for the wayward and unfortunate. The pitying compassion of a noble soul flames out

hotly in indignation at the spectacle of injustice and wrong. But by the necessary limitations of our emotional nature, such feelings fluctuate with our varying moods, with the more or less vivid picture of human misery before our eyes.

There is, however, a more exalted motive, more constraining, more steady and enduring. It is sympathy with Christ in his self-sacrificing endeavor to break the power of Satan, and recover the race from his ruinous grasp. "For this purpose was the Son of God manifested that he might destroy the works of the devil." To share in that purpose with a passionate, personal affection for the Redeemer, and a self-denying devotion to his work, gives one his utmost efficiency, his highest nobility.

It was precisely in this that Mrs. Hunt's character reached its chief glory. Christian womanhood is humanity's best expression.

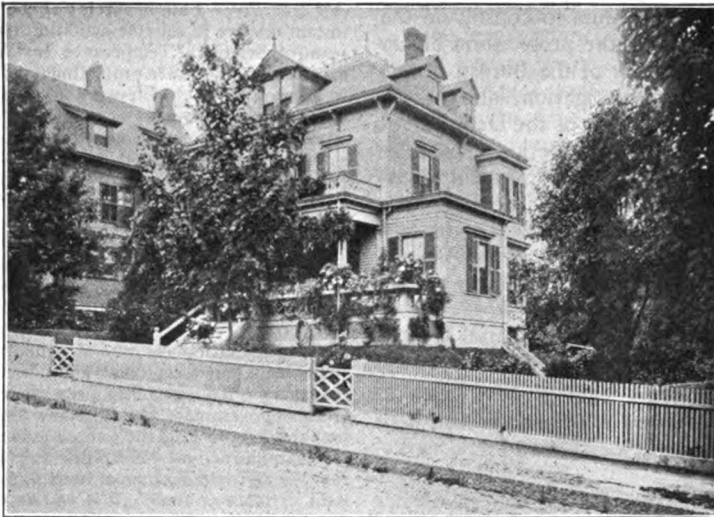
A learned student of history, the late Rev.

Dr. Richard S. Storrs, points to this fact in the following eloquent words:

"It is a fact, significant for the past, prophetic for the future, that even as Dante measured his successive ascents in Paradise, not by immediate consciousness of movement, but by seeing an ever lovelier beauty in the face of Beatrice, so the race now counts the gradual steps of its spiritual progress, out of the ancient heavy glooms toward the glory of the Christian millenium, not by mechanisms, not by cities, but by the ever new grace and force exhibited by the Woman who was for ages either the decorated toy of man or his despised and abject drudge."

Mrs. Hunt's resolute subordination of personal considerations, in her supreme devotion to

the public interests she had espoused in the name of Christ, shone brightly in her meek resignation to the Father's hand, when her able collaborer and beloved son, Captain Alfred E. Hunt, died as a result of his service for his country, as a volunteer in our Spanish War. She



Home of Mrs. Mary H. Hunt, 28 Irving St., Boston, Mass.
Present Headquarters of the Department of Scientific Temperance Instruction

would not permit her sorrow to stay her hand, or abate her energy in her chosen work.

In the same spirit she met the growing infirmities which have removed her from us. She endeavored to ignore the verdict of her physicians that she had but a few weeks to live. She strove by sheer force of will to extend the period of service as long as possible and kept steadily on with her work, managing her Department with her usual skill, until the power of speech had well nigh failed.

In my last interview with her, she said to me, with scarcely audible utterance, "Speak to me of heaven, I am almost there."

Quoting to her the promises that believers shall be with Christ, and like Christ, and as his servants shall serve Him, and remarking that this covers all we need to know, she responded with emphatic assent.

She was serving Him to the very last.

MRS. HUNT'S ADVISORY BOARD

EDITORIAL NOTE

IT is well known that Mrs. Hunt enjoyed the personal acquaintance of large numbers of eminent ladies and gentlemen in this and other lands who are interested in the philanthropic ends she sought to promote; medical men, university professors, experts in scientific research, statesmen, clergymen, reformers, officials in various denominational and educational associations, and that she was continually conducting an extensive correspondence with such distinguished persons, recognized authorities in their several spheres. Moreover, she had organized, with the aid of the Woman's Christian Temperance Union, an Advisory Board, with its various sub-committees, with whom she found it convenient from time to time to consult on the problems often arising in the prosecution of her work as National Director of the Bureau of Scientific Temperance Investigation, and World and National Superintendent of the Department of Scientific Temperance Instruction in Schools and Colleges of the Woman's Christian Temperance Union, and as Life Director of the National Educational Association. The names of the gentlemen thus associated are as follows:

Clergymen and Reformers

- REV. A. H. PLUMB, D. D.,
Pastor of Walnut Ave. Congregational Church, Boston, Mass.
DANIEL DORCHESTER, D. D.,
Ex-National Superintendent of Indian Schools, West Roxbury, Mass.

Educators

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Brooklyn, N. Y.
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Professor of Mental Diseases, Materia Medica and Therapeutics, Rush Medical College, Chicago, Ill.
GEORGE W. WEBSTER, M. D.,
President of Illinois State Board of Health, Chicago, Ill.
JOHN MADDEN, M. D.,
Portland, Ore.
T. ALEX. MACNICHOLL, M. D.,
222 W. 136th St., New York, N. Y.

ESTIMATE OF MRS. HUNT BY HER ADVISORY BOARD

In view of the recent death of Mrs. Mary H. Hunt, the Advisory Board connected with her work for Scientific Temperance Investigation and Instruction in the Public Schools, approves and presents to the public the judgments concerning her character and work which are embodied in the following letter from one of its members, the Honorable W. T. Harris, LL. D., United States Commissioner of Education.

In behalf of the Advisory Board,
ALBERT H. PLUMB, Chairman.

Department of the Interior
BUREAU OF EDUCATION
Washington, D. C.

May 11, 1906

Rev. Albert H. Plumb, D. D.,
Boston, Massachusetts.

My dear Sir:—I am in receipt of your letter of the 8th instant relative to suitable action on the part of the Bureau of Scientific Temperance Investigation and other associations engaged in promoting the cause of temperance, in recognition of the life-work of Mrs. Mary H. Hunt.

I am in full sympathy with this purpose and also agree with you that the Association should give formal expression to its appreciation of the service which Mrs. Hunt performed in the interest of humanity.

Her work was original in its aim and methods and she brought to its accomplishment a rare combination of moral courage, high enthusiasm and intellectual endowments. It is a satisfaction to recall that she herself lived to see her idea respecting scientific temperance instruction adopted by every state in the Union, beginning with Vermont and ending with Georgia in 1902, and by acts of Congress introduced into all schools aided by Federal funds including West Point and the Naval Academy at Annapolis. The idea has been approved also by the German government and by many local authorities and organizations in England, whose influence in time determines public action. Her work was indeed international in scope and broadly human in its purpose, being without limit of place or time. It is certainly most fitting that the Association which was created by her efforts should suitably commemorate its founder and life-long Director, who is worthy to be classed among the great philanthropists of the world.

Very respectfully yours,
W. T. HARRIS, Commissioner.

THE SCHOOL PHYSIOLOGY JOURNAL

Although plans for the editorial management of the JOURNAL during the coming year are not yet fully matured, we are able to announce that it will be continued and that, as heretofore, it will contain each month model lessons in physiology, hygiene, and temperance for primary, intermediate and advanced grades, with suggestions for their classroom use and authoritative quotations from the leading scientists of the world. As usual, the next issue will be that for September. Renewals and subscriptions beginning with that number should reach us not later than August 15. Make all checks and money orders payable to the SCHOOL PHYSIOLOGY JOURNAL.

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HENRIETTA AMELIA MIRICK, Assistant Editor

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"Thou must climb faster for the aspiration
To walk henceforth where her swift feet have trod;
Thou art but fuller for the desolation
That shuts thee in with God."

SHE YET SPEAKETH

A CHILD'S hand is on the door latch of the millennium.

God has taught us to lay our hand upon the child before Satan gets his grip upon him.

The only remedy for vice is to remove the ignorance from which the vice originates.

The children are the hope of the temperance reform, and the public school practically reaches them all.

Seek ye first the temperance education of the children, and all other temperance blessings shall be added unto you.

A majority of the voters of tomorrow are in the first five years of the public schools of today.

Thorough scientific temperance instruction in the first five school years means future no-saloon majorities.

The American people want no temporizing in the instruction which is given their children on this vital subject. It must be as radical as the truth itself.

If the people of the next generation are not total abstainers, it will be the fault of the temperance men and women of today who fail to enforce their temperance education laws.

Across the morning of the twentieth century we raise the signal: For the temperance education of the children the world expects every man and woman to do their duty.

Vain are the efforts of man to make the clock of the world move backward. Its great pendulum swings to the rhythm of truth. In the fullness of time it strikes the death knell of

error, and when that time comes no man can turn the hand back on the dial.

The children are the legal heirs to every truth of science that warns against the use of alcohol and other narcotic poisons. To deprive them of these truths is an unspeakable sin, not only against the children, but also against the nation soon to be governed by them.

The vital step is to educate public opinion as to the dangerous character and harmful effects of alcohol. This education must be as universal as the people, and it must be imparted before appetite is formed.

We should be as unyielding and persistent as gravitation concerning the pursuit of this study in the most effective way, in all lower grades as well as in the more advanced classes, until the subject is covered.

The International Course of Study is the result of twenty years' experimental study of what must be taught, how it should be taught, when, and to whom, in order to secure a nation of strong, achieving people, and to insure for them a future of intelligent sobriety.

Nothing can induce me to indorse a book that minimizes in the least the full warning that the truth warrants and that our times demand for the children and youth of our land against alcohol. If we would save the land from the evils of narcotics we must watch to see that the books put into the hands of the children in the schools teach no emasculated gospel of temperance.

Truth can be trusted to assert itself and to overcome and win. It has in the past, and it will do so more and more if we do our part, which is to publish it and to work without ceasing that it may reach the minds and souls of our fellow beings.

The twentieth century heroines who work for the overthrow of the tyranny of alcohol, through the spread of the truth as to its real nature and effects will, in the grand assize, rank with those who have labored to make our country great; and with a greatness—that of character—that brightens with the lapse of time.

For myself I claim no credit. As a leader of the mighty hosts of godly Christian Temperance Union women in this work, I have tried only to follow the great Leader without whose guidance and help all our efforts would have been in vain.

The God of Nations does not estimate values as we do. That the strong in attainment, in nobility of character, and in possessions should rescue the weak is the loftiest virtue, and a reflection of his spirit whose supreme sacrifice is the glory of history.

WEEP NOT FOR HER

BY LILLIAN M. N. STEVENS

President National Woman's Christian Temperance Union

IT will be hard for the members of our organization to realize that Mrs. Mary H. Hunt is no more to mingle with us as she has done for nearly thirty years, the gifted superintendent of one of the most important divisions of Woman's Christian Temperance Union work. She was heroic in her endeavor to secure for the youth of this land and all lands correct scientific teaching concerning the nature and effects of alcohol. These endeavors resulted in glorious achievement.

"Tears are never for those who die,
With their face to the duty done,"

and we know that her work, God's work, will go forward, and as the tide of time rolls on the truths she urged will receive wider and fuller recognition. At the same time that her "eyes were closing in the sleep that knows no dream," thousands of people in San Francisco were suffering from hunger and thirst. Fifty cents was readily paid for a glass of cold water, and the order was given and enforced that all bottles taken from saloons or groceries be broken, and that all alcoholic liquors be destroyed. This is but another forceful proof of that point for which Mrs. Hunt nobly contended, that alcohol is a poison, not a food, and not a safe beverage.

Mrs. Hunt's memory will be a perpetual strength to many who engage in the warfare against the ravages of strong drink. This must be so, for the work and the words of those who strive to purify and uplift, are immortal and eternal. Her heroic soul has passed on but her great work will live forever.

EXTRACTS FROM LETTERS AND TELEGRAMS

The officers of the World's Woman's Christian Temperance Union desire to express to you our sympathy and to all the relatives of Mrs. Hunt. We realize the enormous loss to our great cause which gained so much by her most efficient advocacy. We shall miss her bright inspiring presence at our approaching meeting in Boston, and shall deeply regret that when the World's Convention meets in her own city she will not be with us.—AGNES SLACK, Honorable Secretary, Ripley, Derbyshire, Eng.

One of the most brilliant and devoted leaders in our work has been taken from us, and we wish to record our sincerest appreciation of the great work she has achieved on behalf of scientific temperance instruction.—British Women's Temperance Association.

In common with all our White Ribbon Sister-

hood, we experience a deep sense of regret and loss. We feel assured, however, that the memorial our dear sister would most desire would be that we prepare ourselves for the higher service into which she has entered, and carry on unflinchingly the work to which she devoted so many years of her life. In the little while of our tarrying, may God help us all to be true to the highest.—FLORA YORK MILLER, on behalf of the Ontario W. C. T. U.

The members of the Good Templar's Woman's Auxiliary Society desire to place on record their deep sense of the services rendered to humanity and to the cause of temperance by the late Mrs. Mary H. Hunt, and their appreciation of her devotion and self-sacrifice during her many years of effort to secure the teaching of temperance physiology in the public schools of America.

They rejoice that this noble woman lived to see the fruition of her labors in the adoption of a temperance instruction law in every state of the Union, and they assure her relatives and friends that their grief is shared by thousands of those who loved and revered the noble woman whose memory all must honor for her "work's sake."—JESSIE FORSYTH, President.

Irreparable loss. Great in mind, great in soul, great in heart, great in accomplishments. The blessing of her work will rest on untold generations of all races. With affection and admiration and as a pledge to support and maintain the work established by her, we lay this tribute at her feet.—New York State Central Committee for Scientific Temperance Instruction, ALFRED L. MANIERRE, Secretary.

I have known Mrs. Hunt for years and have been surprised again and again by her wonderfully comprehensive knowledge of all phases of the temperance question. Not alone had she the history of temperance legislation and effort in the past at her command, but she carried in her mind an exact remembrance of the present laws of each state and territory in the Union. When the scientific aspect of alcoholic poisoning was under discussion, she showed herself thoroughly conversant with the latest scientific judgments of the leading writers and experimenters in both Europe and America. Her knowledge of German thought at the universities was most complete. It was due to her that scientific temperance instruction which is doing so much good in the primary and grammar schools of all the states was introduced and continued. I hope that her friends will see that there is no decrease in zeal on their part to carry on her work now that she has gone to her well earned rest.—JAMES H. DARLINGTON, "The Bishop's House," Harrisburg, Pa.



Primary Lessons

REVIEW WORK

GAINING A HEALTHY BODY

A WRITER in one of the most notable of recent books says that the children of a nation are capable of expressing all the good or evil the world has known or may know. It is essentially a matter of opportunity and environment whether the children of today are to become physical wrecks and moral outcasts, or strong and noble men and women, fathers and mothers of virile sons and daughters.

No psychologist has yet been able to tell how much influence environment has upon the child, but it is certainly very great. Even the child of vicious parents has often a better ancestry not far behind him which wants only the right environment to reassert itself in his salvation. On the other hand, scarcely any child of even the best parentage but has some hereditary taint against which he must be armed lest temptation overtake him.

So the teacher, the child's greatest single enviroing influence except the parents, and sometimes exceeding even them, is endowed with high privilege and great responsibilities. This is especially true of the primary teacher, for statistics show that a large proportion of pupils entering the first primary year leave school forever at the end of the first year's work, and more yet never enter the fourth year. As these children are from homes where hygienic teaching is most needed and where old world drinking habits are often found, it is clear that what the teacher does not teach them of the dangers of alcohol and other narcotics they may never learn.

Probably most of the children think of President Roosevelt as one greatly to be admired. Tell them the story of his sickly childhood; how he realized that he could never accomplish much or even enjoy life if he could not gain a healthy body; and then explain how he determined to obey the rules of health, just such as they have been learning from their physiology

lessons, and how at last he came to be strong and well because he took pains to live rightly.

Make the story as interesting as possible, and emphasize specially the points of hygiene most needed by the pupils of your school. Make it clear to them that had Mr. Roosevelt drunk alcoholic beverages and used tobacco when he was growing up he might never have come to be a well man and thus able to do the strenuous work which a president must do.

Point out, too, that while he was a feeble child but became strong through wise living, on the other hand, some other great men who were healthy as children became weak and died young leaving their life work unfinished because they disobeyed the laws of health. The following questions may be used in reviews:

REVIEW QUESTIONS

Why will the child who plays much outdoors grow faster and be stronger than the one who stays quietly indoors?

Which child will be healthier, one who sits and stands straight, or one who rounds his shoulders and stands awkwardly?

Why not eat unripe fruit, pickles, or much candy?

Why is cider harmful when ripe apples are wholesome?

Why ought the windows of our bedrooms to be open every night? Why should the beds have a thorough airing every morning?

What drinks hinder a child's growth? Why does not the boy who uses cigarettes grow as large and as strong as he should?

How often ought a child to bathe his face and hands? his entire body? How shall we care for the teeth? the nails?

What clothing is best suited for winter wear? for summer wear? Why is it bad for a child to wear wet clothing or to go with wet feet?

Why not wear rubbers in the house?

AUTHORITATIVE QUOTATIONS

BEER NOT A LIQUID BREAD

The terms "nourishing beer" and "liquid bread" are unscientific and false, for real bread, bought for the same price, contains more than 15 times as much nourishment, but—no alcohol. Milk is a food 30 times as reasonable and meat is from 10 to 15 times as reasonable as the best beer.—PROFESSOR VON PETTENKOFER, *Internationale Monatsschrift*.

TOBACCO AN INJURY TO THE GROWING BOY

Tobacco in any form is a great injury to a growing boy. A cigarette-smoking boy will not make a strong man.—DR. BARTHOLOW, Professor of Medicine, Jefferson Medical College, Philadelphia.



Grammar Lessons

REVIEW
WORK

RESPONSIBILITY FOR OUR OWN LIVES

THE *Review of Reviews* gives a characteristic incident in the life of George F. Baer, a man who, because of his purity of life, remarkable industry, and his ambition and determination to achieve "something worth while," has steadily risen from the ranks till he is the leader of the coal operators in the great anthracite fields.

About twenty years ago Mr. Baer, then an attorney for a railroad company, and others were inspecting an unfinished trestle. As they walked out on the loose timbers over the dizzy heights, he hesitated and turned pale. The engineer in charge noticing his apparent nervousness, said, "Mr. Baer, if you feel at all nervous we can turn back." "No, I'll not turn back," was his deliberate reply, and as the engineer was about to urge against possible danger, he added, "My life is in the hands of—George F. Baer."

This reply reveals the determination, confidence, and self-control which are the key to his successful career.

It may also very properly serve as the central thought around which the teacher may group the essential features of the year's work in this branch.

Children are always interested in the stories of how men have achieved great success in spite of difficulties, and a short discussion of this man's career as illustrated by the incident quoted will hold their attention.

First, bring out the point that here as always, having selected the wise and proper course, he then decided to follow that course to the end, even though it might be contrary to his desires and require rigid self-control; and second, that his life was in his own hands to be made or marred as he himself chose.

Bring home to the members of the class their responsibility for their own lives. Bid each say to himself, "My life is in the hands of—myself. If it is to be a success instead of a

failure, I must decide upon the right course and then follow it, no matter how much self-denial it may cost me."

What are the prime essentials in any line of endeavor? Point out that the man who succeeds must have a good character, a clear brain, and a healthy body, and that these qualifications will be more necessary in the future than they have ever been before.

Why is it so essential that foresight and self-control should be exercised during the growing period? How do people often undermine their health or become addicted to the use of tobacco or alcoholic drinks? Show that it is by saying "yes" to temptations, by carelessness in hygienic living, and by *beginning* the use of narcotics.

Emphasize the fact that it is the nature of alcohol and tobacco in common with all narcotics to destroy self-control, and that just here is one of the greatest dangers to health and future success. What effect do narcotic habits have on one's business prospects? one's health?

What cool drinks are better than beer and cider? Ask pupils to bring in recipes for refreshing summer drinks. The best may be written upon the board to be copied into note books. The teacher should be prepared to furnish others if necessary. Review points in hygiene most likely to be needed through the summer, such as suitable food and drink, dangers from eating stale food or milk, drinking ice water when overheated, need of outdoor life, treatment of wounds, poisoning from plants or mushrooms, apparent drowning, and sunstroke, emphasizing the ounce of prevention in each case.

REVIEW QUESTIONS

What is a real food? Why are alcoholic drinks not foods? What is the effect on the brain and nerves of drinking beverages containing alcohol?

How does the food we eat get to all parts of the body to form muscle, or brain, or bone?

What is the name of the little pump that sends the blood to all parts of the body? What are the two kinds of blood, and what is the name of the tubes carrying each?

How can one tell whether the blood from a wound is from an artery or a vein? How can bleeding be stopped?

How can we avoid alcohol poisoning? What is to be done when other kinds of poison have been taken?

What keeps the body warm? How can we prevent sunstroke?

What part of the body makes the food fit to enter the blood?

Why is it not correct to say that beer is a pure liquid food?

Why not take patent medicines?

Explain in what ways cigarettes undermine a boy's chances of success in business. Why does the boy who begins the use of cigarettes or tobacco in the lower grades almost never graduate from the high school?

AUTHORITATIVE QUOTATIONS

All this talk about the nutritive value, the strengthening and curative properties of alcohol, is nothing but a cloak the drinker employs for concealing his appetite. If people did not wish to drink, nobody would concern himself about the trifling nutriment claimed for alcohol.—P. J. MOEBIUS, M. D., Leipsic.

Although the relation between the burning of alcohol and the burning of the nutritious substances in the animal organism has not been fully explained physiologically, this much is true, that alcohol taken however moderately is not to be classed among nutritious substances.—ADOLF FICK, M. D., Univ. of Wurzburg.

The findings of exact science should be applied to practice. Science

teaches that even small amounts of alcohol diminish executive ability.—*Der Alkoholismus*, 1904.

Alcohol is an insidious poison which has the power of insensibly causing degeneration of living tissues, deluding the brain while paralyzing its nervous energy, especially blunting the sensations.—A. FOREL, M. D., Univ. of Zurich.

The daily observation of physicians teaches that the regular use of alcoholic drinks by children causes loss of appetite, injures the digestive organs and has a very unfavorable influence upon character and disposition. Besides, it brings on serious diseases, such as degeneration of the liver and brain. Experience teaches also that the habitual use of alcohol lowers the resistance of the body against infectious diseases.—*Der Alkoholismus*.

All the organs of the body are liable to participate to some extent in the deterioration wrought by alcohol. Whilst the nervous struc-

tures usually suffer earliest and most, the other tissues of the body, though it may be slowly, and with but few subjective or objective indications, undergo deterioration, and become the seat of disease, and not infrequently the sufferer and his friends are ignorant of the actual causation of the process hastening towards death.—T. N. KELYNACK, M. D.

That alcohol acts inimically upon the heart, and may cause a grave lesion is now a recognized fact; but it is not so well known that a heart poisoned by this toxic agent is most insecure and exposes the patient to the risk of sudden death.—DAVID DRUMMOND, A. M., M. D., Senior Physician to the Royal Infirmary, Newcastle-upon-Tyne.

Alcohol is a poisonous matter, its venomous-

ness increasing with the amount and frequency of the doses.—A. FOREL, M. D., Univ. of Zurich.

According to Von Ziemssen, "we possess no medicine which can act as a direct antidote to alcohol or neutralize its pernicious effects."

—DR. HAMMOND, in the *North American Review*.

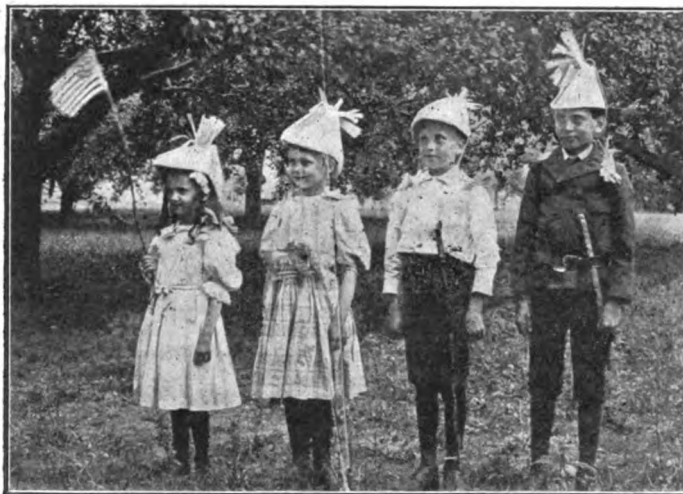
The total

work product obtained with the use of alcohol is less than that obtained without it.—E. DESTREE, M. D., Univ. of Brussels.

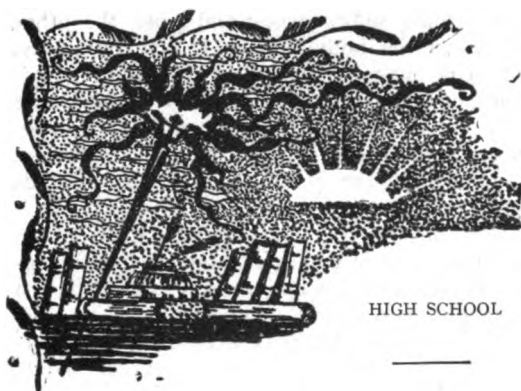
Most scientists, who have carried on experimental work on this question, have come to the conclusion that alcohol, even in moderate amounts, retards stomach digestion and in large amounts stops it entirely.—M. HELENIUS, in *Die Alkoholfrage*.

The use of tobacco has a peculiarly demoralizing effect on the moral nature of the young. In addition to making boys tired, stupid, and lazy, it makes them irritable and perverse, and careless of the rights and feelings of others, besides in many instances leading to lying, and even stealing.—E. STUYER, M. D., Ph. D.

It is said that the increasing mortality in the French army is largely due to pulmonary affections that are themselves favored by the general habit of cigarette smoking.—*Journal American Medical Association*.



The children are the hope of the temperance reform, and the public school practically reaches them all



THE SCIENTIFIC VIEW OF ALCOHOL

ACCORDING to the *Hospital* (London), it is not overstating the matter to say that our grandfathers, lay and medical alike, regarded alcohol as the prime resource in cases of illness or injury. The idea is characterized as a "monstrous superstition" which is reluctantly but surely yielding to the light of modern scientific knowledge. A distinguished physician and writer, Dr. C. W. Saleeby, says that doctors were wrong and egregiously wrong on every specific point connected with the properties of alcohol, owing to the absence of the clinical thermometer and exact experimentation which left every point to be decided by the subjective sensations of those who took liquors.

Some of the fallacies which thus gained credence have been more hard to kill than others and these may be profitably examined in review work with advanced classes:

CURRENT FALLACIES

- 1—Alcohol is a stimulant to the heart and circulation.
- 2—Beers, wines, and other liquors "build up strength," give appetite and assist digestion, especially in the weak.
- 3—Alcohol increases intellectual strength.
- 4—Alcohol drunk in moderation is not dangerous.

ALCOHOL NOT A HEART STIMULANT

We have quite enough particulars for forming the general judgment that alcohol is an injury to the circulation.—GEORGE ROSENFELD, M. D., in *Zentralblatt für innere Medizin*, March 24, 1906.

In the light of these experiments one is not only justified in denying to alcohol any stimulating power whatever for the heart, but on the contrary, in declaring that it lowers the working capacity of that organ.—JOHN J. ABEL, M. D. Johns Hopkins University.

The physiological action of alcohol is complicated by the fact that it is a pseudo-stimulant, that it seems to stimulate when it really narcotizes. The results of ten years of research by several of the leading physiologists of America classify alcohol as a narcotic poison and not as a stimulant.—WINFIELD S. HALL, M. D., Ph. D., Chicago, (1906).

ALCOHOL DOES NOT BUILD UP STRENGTH

Alcohol is useless in regard to muscular activity, and indeed hurtful in small quantities. It gives no additional energy, but it must give an additional amount of waste material to be excreted, and thus must add to a certain extent to the work of the excretory organs; it certainly interferes directly with them.—G. SIMS WOODHEAD, M. D., Cambridge Univ., England.

As a means of nourishment in the service of therapeutical dietetics, alcohol can no longer be considered.—RUDOLF ROSEMAN, in *Zeitschrift für Diätetische und Physikalische Therapie* (1898).

Alcohol has been acclaimed as a stimulant of the digestion and appetite; yet any modern text book on pharmacology will inform you that alcohol arrests digestion in measure proportionate to its concentration, and destroys appetite. C. W. SALEEBY, M. D., London.

Although alcohol contributes energy it diminishes working ability. We are not able to find that its energy is turned to account for nerve or muscle work. Very small amounts, whose food value is insignificant, show an injurious effect upon the nervous system.—MAX GRUBER, Pres. Royal Inst. of Hygiene, Munich (1905).

We must deny all stimulating effects to alcohol. The total working capacity after taking alcohol is always less than before. In the beginning, after taking alcohol, the digestive fluids are somewhat more copiously secreted, but finally they are greatly reduced.—SWIENTOCHOWSKI (1906).

In any case wine as a "strengthenener" is a myth, or rather pure suggestion.—AUGUST FOREL, M. D., Univ. Zurich.

ALCOHOL DOES NOT INCREASE INTELLECTUAL STRENGTH

It has been proved by Kraepelin that intellectual work is reduced by the alcohol habit; especially is the critical judgment thus reduced.—BEHRENS, in *Alkohol and Kunst*.

Alcohol is not found by psychologists to in-

crease the quantity or vigor of mental operations; in fact, it clearly tends to lessen the power of clear and consecutive reasoning. In many respects its action on the higher functions of the mind resembles that of fatigue of the brain.—JOHN J. ABEL, M. D., Johns Hopkins Univ.

In all those vocations of life where keen senses, sharp attention, the ready and immediate action of clear judgment, or great concentration of the mind are called for, alcohol in any form or amount is injurious.—JOHN J. ABEL, M. D., Johns Hopkins University.

Alcohol is a strong and dangerous poison. It can not possibly, as was formerly supposed, be substituted for food. No relish should contain alcohol. Abstinence is the only proper and normal course in the face of such a dangerous poison.—W. PFAFF, M.D., in *Der Alkoholismus*, 1904.

ALCOHOL IN
MODERATION
IS UNSAFE

Scientific investigation has established the fact that even a moderate use of alcoholic beverages impairs the acuteness of sight and hearing, including the power of distinguishing colors.—*Deutsche Monatsschrift*.

It has been proved that prudence, judgment, clear-sightedness, and a sense of duty are vitiated by nothing so readily and to such a degree as by alcoholic drinks.—*Deutsche Monatsschrift*.

Now every one will understand why France, the drinker of wine has become a drinker of spirits; it is because they are inseparable and the one leads to the other.—DR. LEGRAIN in *Les Annales Antialcooliques*.

SELF-CONTROL, by William George Jordan. \$1.00 net. Fleming H. Revell Co., New York.

A reprint in permanent form of a number of essays heretofore published as separate booklets. Each helps to give a right attitude towards life and its obligations, and shows true insight into human nature. An excellent book for young people.

BOOK NOTICES

THE TEACHER AND HIS WORK, by Samuel Findley, Ph. D. Price, \$1.00. Hinds, Noble & Eldredge, New York.

Years of experience with school work in nearly all grades as teacher and superintendent have well fitted the author to speak on the subject discussed in this book, and out of this experience he writes. Young teachers will find many suggestions for avoiding the inevitable snags and pitfalls that beset their path, and all who are interested in educational matters will be interested in Dr. Findley's papers.

THE STORY OF HUMAN PROGRESS, by Frank W. Blackmar, Ph. D. Price, \$1.25. Hinds, Noble & Eldredge, New York.

He is a bold man who would attempt to write a history of civilization after Guizot's masterly treatment of this theme. There is room, however, for such an elementary treatise on the progress of man as will enable younger pupils to come intelligently to the study



"A happy world this is.
For life is love, the world is love, and love is over all."

of the philosophy of history in later years, and Dr. Blackmar's book answers this description. It should do much to popularize in high schools and academies this most absorbing of studies.

THE VEST-POCKET STANDARD DICTIONARY, James C. Fernald, editor. Cloth, 25 cents. Funk & Wagnalls Co., New York.

A word book of this kind, which may be always at hand, is a great convenience, and this answers the purpose admirably. Special features which add to its value are rules for punctuation and pronunciation, a chart of the states and the United States with statistics, a descriptive gazetteer, and much miscellaneous information.

SUCCESSFUL TEACHING, by practical teachers, \$1.00 net. Funk & Wagnalls Co., New York.

Under this title is grouped a collection of fifteen prize essays on as many educational subjects. Each is written by a practical teacher and gives suggestions which have been found helpful in the school room.

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